

OLD!
30TH ANNIVERSARY MEGA DRIVE SPECIAL
THE ESSENTIAL GUIDE TO CLASSIC GAMES
retro GAMER
AMSTRAD | COMMODORE | SEGA | NINTENDO | ATARI | SINCLAIR | NEO-GEO | SONY | COIN-OP | MOBILE
THE STORY OF SAVAGE
NICK BRUTY LOOKS BACK AT FIREBIRD'S JAW-DROPPING 8-BIT MULTIGAME
ALSO INSIDE
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THE RETROBATES

FAVOURITE MEGA DRIVE GAME



DARRAN JONES

Thunder Force III – I remember selling my Game Boy so I could buy this and several other Mega Drive games. It's exceptionally well crafted and I regularly return to it.
Expertise:
Juggling a gorgeous wife, two beautiful girls and an award-winning magazine
Currently playing:
Sega Mega Drive Classics
Favourite game of all time:
Strider



DREW SLEEP

Rocket Knight Adventures, it was the first videogame I ever owned and Sparkster always has a place in my heart.
Expertise:
Marco Polo
Currently playing:
Shadow Of The Colossus (2018)
Favourite game of all time:
Final Fantasy VIII



NICK THORPE

An obscure little platform game called *Sonic The Hedgehog*. You probably haven't heard of it, because I don't talk about it much.
Expertise:
Owning five Master Systems (I sold two)
Currently playing:
Fox N Forests
Favourite game of all time:
Sonic The Hedgehog



SAM RIBBITS

I've love how awesome *Comix Zone* and *Gunstar Heroes* look. But I'd probably go for *Streets Of Rage II* as my favourite.
Expertise:
Pixels
Currently playing:
Limbo
Favourite game of all time:
Croc: Legend Of The Gobbos



GRAEME MASON

Streets of Rage II. It's still a blast today. Co-op with my sons is great fun, even if descends into an argument over who gets the pipe.
Expertise:
Adjusting the tape azimuth with a screwdriver
Currently playing:
Dishonored 2
Favourite game of all time:
Resident Evil 4



DAVID CROOKES

Sonic The Hedgehog: I stood in Boots and saw it running at a blistering speed, prompting me to want a Mega Drive.
Expertise:
Amstrad, Lynx, adventures, Dizzy and PlayStation (but is it retro? Debate!)
Currently playing:
Tetris
Favourite game of all time:
Broken Sword



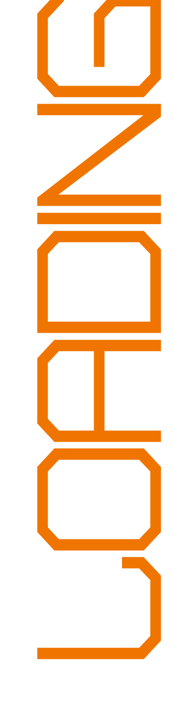
JASON KELK

It's a fairly even split between *Thunder Force III* and *Thunder Force IV*, although if I have to choose one it'd be *Thunder Force III* [Ed: good choice].
Expertise:
Being a homebrew hero
Currently playing:
The Last V8 (C64)
Favourite game of all time:
Io



MARTYN CARROLL

Desert Strike. The original and best. I recall losing an entire summer trying to beat it.
Expertise:
Sinclair stuff
Currently playing:
Fortnite
Favourite game of all time:
Jet Set Willy



Sega's Mega Drive will always hold a very special place in my heart. While it wasn't the first games console I purchased with my own money (that was the Master System) it was the first that I paid for in one go (instead of making monthly payments using my Aunt's expensive catalogue) and it was the first to open my eyes to the wonders of import gaming.

The machine felt like a game-changer to me as a young 16-year-old, and the games that I constantly drooled over in various games magazines appeared to be arcade perfect. They weren't, of course, but the quality was still very good and a gigantic step up to what I was then used to. It felt like gaming was going through an exciting change to me, and crucially, people at my workplace were talking about the console as well, even those I wouldn't typically consider to be gamers.

So this month we've wanted to try and capture some of that earlier Sega excitement by including an excellent book that includes our essential games for the system, as well as 20 cool stickers. Oh and we've got yet another stunning exclusive cover for subscribers, so if you haven't taken out a subscription already, make sure you do.

Enjoy the magazine!



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>> Load 182 Breathing new life into classic games





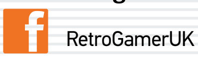


RETRO RADAR

REVIVALS

FEATURED

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RetroGamerUK

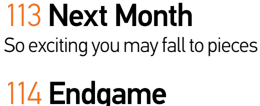

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READERS COMMENTS

Very sad news. A total Speccy legend.
Psj3809

He had a remarkable career with Sinclair and designed not just the Spectrum's case and keyboard, but those for pretty much all their products from the Eighties. Even if the electronics inside weren't always up to snuff he had a knack for making things look elegant and futuristic.
Matt_B

Here's hoping the Next is a roaring success. It's a fitting finale for him.
Antiriad2097

Very sad news. I met him at Spectrum 30 and also saw his presentation last year at the Spectrum 35. A very humble, clever man. RIP, Rick.
Jake Warren

FAREWELL TO A DESIGN LEGEND

Former Sinclair Spectrum designer Rick Dickinson has passed away

Retro fans were shocked on the 26 April to hear the sad news that Rick Dickinson, designer of the famous look and feel of the ZX81 and ZX Spectrum computers, had passed away while receiving cancer treatment in the United States. In recent times, Rick had returned to his roots, helping in the conception of the Spectrum Next, anchoring the new, upgraded, computer with its forebears from the Eighties.

But back in the late Seventies was when it all began, as a fresh-faced Rick Dickinson graduated from Newcastle Polytechnic and joined Sinclair as an in-house industrial designer in December 1979. After a small role on the Sinclair ZX80, his first major project, he began work on its follow-up, the ZX81. Rick worked closely with engineers Jim Westwood and Richard Altwasser as the internal circuitry was developed, often communicating on a daily basis as the project took shape. "Richard and I had to work very closely at times because of the strong physical relationship between the electronics and what's happening on the outside," Rick told **Retro Gamer** back in issue 100. "A PCB is not designed and then handed over to the casing department – the two disciplines work and evolve the design in parallel."

This relationship continued for Sinclair's smash hit ZX Spectrum. Charged with helping to create something that was powerful enough to become a potential hub of interactivity, while maintaining Sinclair's philosophy of miniaturisation, Rick had little to influence his efforts as most other computers of the time repeated the same uninspired and bland designs. Yet his, and Sinclair's triumph was to eliminate the major pitfall of the smaller scale – that it would be regarded as a mere toy – to forge a futuristic-looking computer with its shiny aluminium faceplate, smooth edges and prominent colour stripes, a computer that looks just as ultramodern today as it did in 1983. And perhaps, of course, it housed one of the most fondly-remembered aspects of any piece of tech from the Eighties. Realising that the market would never accept the membrane keyboard of the ZX80 and ZX81 in any considerable number, and wishing to avoid the high cost and size of traditional keyboards, the famous 'dead flesh' rubber keyboard became the compromise that came to define the iconoclastic microcomputer. Having



» Rick Dickinson joined Sinclair in 1979 as an in-house industrial designer.



» The Spectrum Next marks the last piece of Sinclair hardware Rick worked on.

followed Sinclair's early products since his days as a schoolchild, Rick was ideally placed to ensure Sir Clive's traditions were maintained. "I'd always loved the unbelievable smallness of size and overall elegance of design," Rick revealed back in issue 100. "I merely attempted to continue this design tradition – a kind of unbelievable technological capability encased in clean Bauhaus minimalism."

The success of the ZX Spectrum 48k led to huge changes at Sinclair as the company moved towards a more corporate way of working. After the pressure to create a 'proper' keyboard and introduce a reset button resulted in the Spectrum 48k Plus, the Spectrum 128k, rushed into production following the sensational sales, was Rick's next design, and one that diverged away again from the spirit that had created the original 48k model. "From my point it was churn it out and get on with it," he told us in issue 48's retrospection of the upgraded model, while admitting that there had been no clear migration between the Spectrum Plus and 128k. In a way, Sinclair had fallen into the default design modes of its rivals, although despite the time pressure, Rick still managed to score a significant piece of innovation with the computer's prominent external heatsink, which has since earned it the affectionate nickname of 'toastrack'.



» An early image of a young Rick standing outside the Sinclair building.

"I'd always loved the unbelievable smallness of size and overall elegance of design"

Rick Dickinson

Having also been involved in the creation of the ill-fated QL, Rick left Sinclair in 1986 to start his own design consultancy, Dickinson Associates.

From there he helped produce a portable computer, the Cambridge Z88, as well as designing another for Amstrad, the company that had controversially bought Sinclair out the same year he had left. Rick continued to design new technology and, his enthusiasm undimmed for the computers that had made him a legend among Sinclair fans, had become involved in the Spectrum Next project. "The very first call we had with Rick, he was on a ski break in Switzerland," says Henrique Olifiers, instigator of the Next project. "But he agreed to be involved, to design the look and feel of the new Spectrum. His role was basically to be inspired by the original design, but update it to a new look and feel." A statement on the Spectrum Next website acknowledges the weight that now lays on the shoulders of those behind the latest Spectrum computer. "We are left with the task of delivering Rick's latest and last work. It is an even larger responsibility now as we each feel this needs to exceed perfection. It has to stand up against his much loved and respected prior works and be counted in amongst his greatest designs."



» Rick eventually left Sinclair in 1986 and founded a new company, Dickinson Associates.

Rick Dickinson will be sorely missed by many. He leaves behind an array of renowned designs that represent a unique British pioneering spirit, a spirit that regularly failed to be compromised by commercial and practical necessities. *

DICKINSON DESIGNS



ZX81

After assisting on the look of the ZX80, Rick progressed to a full role on its follow-up. While many see it as a mere stepping stone to the ZX Spectrum, the ZX81 itself was a sleek and efficient-looking machine with its bold red name and compact case. The keyboard was a drawback, corrected with Rick's next design. Sort of.



ZX Spectrum

The tech had improved, but Rick was still restricted by the keyboard, the size of which was determined by the minimum key spacing that Sinclair thought it could get away with it. Nevertheless, the Spectrum, with those idiosyncratic keys and classic design, became a hit. The machine, with its rainbow motif, is still instantly recognisable today.



ZX Spectrum Next

Rick's task with the Spectrum Next was to combine the memorable aesthetic of his previous designs with a brand-new shiny case for the 21st century. We think he's succeeded thanks to a combination of an improved Spectrum Plus-esque keyboard, effortlessly stylish lines and that quartet of famous colours etched into its angled right side.

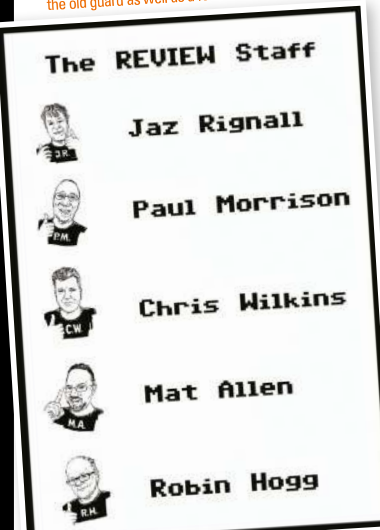
ZZAP! TO THE FUTURE

CHRIS WILKINS ON THE RETURN OF ZZAP!64

Some things are as predictable as night following day, and Chris Wilkins' great new retro project is one of them. From the moment he launched a Kickstarter project for a *Crash* annual in early 2017 it quickly became apparent that Commodore 64 fans wanted a revival of their popular gaming magazine, too: *Zzap!64*.

Chris duly obliged and he began another crowdfunding campaign for a brand-new *Zzap!64* annual earlier this year. The project quickly smashed its £20,000 target and, at the time of writing, it currently sits at over £56,000 with 61 hours to go. "We started a *ZZap!64* group on Facebook towards the beginning of the year that very quickly filled up with members – so over the months we have kept this group of fans up to speed with what we were doing and have talked all things Commodore 64," Chris tells us. "We sensed the excitement within the group, but were still blown away at how quickly the goal was reached – I believe it was around four-and-a-half hours."


» Chris Wilkins, seen here with Jon Romero, is confident backers will love his new *Zzap! 64* book.



» The *Zzap! 64* team will include some of the old guard as well as a few new faces.

Chris is once again working alongside Roger Kean and Oliver Frey, the creators of both *Crash* and *Zzap!64* and is keen to ensure that the new annual will be as authentic as possible. "With the *Crash Annual* we looked back at the early years of Crash from issue 5 or so up to issue 18 and the look and tone of what we produced fell in line with that era," Chris continues. "Roger went so far as to measure where straplines and such were in a copy of *Crash* and then replicated to the millimetre where things should be in the annual." While the new *Zzap!64* annual will be business as usual in terms of authenticity, the team has made a few changes here and there. "Some differences have included the format of the reviews," explains Chris. "*Zzap!64* has reviewer portraits, so Oli had to produce a few more that were needed for a couple of our new *Zzap!* writers, as well as one each for Robin Hogg and Jaz Rignall who now look, like all of us, a little older since their heyday writing for the original *Zzap!64*. Oli is also producing a brand-new cover for the annual that we are looking to keep secret until it lands through readers' letterboxes."



» We are loving the annual's authenticity. It's bound to please fans of the original magazine.

> "Oli is also producing a brand-new cover for the annual that we are looking to keep secret"
> Chris Wilkins



» Here's another cool perk, based around the rather excellent *IK+*.

While Roger is once again on editing duties, there are plenty of other classic *Zzap!64* writers that will be helping out, including the aforementioned Julian 'Jaz' Rignall, Robin Hogg and Paul Rand, who all worked on the original magazine. "These guys are contributing to the reviews as well as brand-new features in the annual including an extensive 'Zzap Back' article by Jaz," continues Chris. "The annual will be full to the brim of new reviews of games that have been released on the C64 since the last commercial days of the machine – these include the like of *Sam's Journey* and the reimagining of *Commando* by Elite. The content will be new, but familiar and fit the very unique tone and humour of *Zzap* that made it *Zzap*."



» The kickstarter has some great perks, including some stunning pixel work by Simon Butler.

Zzap!64 Annual 2019 will be released in September 2018. Keep an eye out for a write-up in a later issue of **Retro Gamer**. *

After Burner II Vinyl

Data Discs' 15th offering pays tribute to Hiroshi Kawaguchi's excellent soundtrack for *After Burner II*. The double vinyl includes both the familiar arcade renditions of the tracks alongside the arranged versions from SST Band. The vinyl discs themselves are both a cool purple, which is sure to make any coloured vinyl fan salivate all over their shoes – these are limited, but classic black colours are also available. The package also comes with a print of the full art, which would look great framed above your audio setup. As for the soundtrack itself, well, it's *After Burner II*: it's superb. For those of you who aren't familiar with it, you should really play the game, the soundtrack features rolling bass and riffing guitars which is tied together with an almost operatic flair. It's enough to make you want to slide a pair of aviators on and take to the skies.

Price: £24.99
From: data-discs.co.uk

PICK OF THE MONTH

Power Stick

We love a good arcade stick, and Retro-bit's NES offering is handy for those of you who aren't fans of the regular NES pad. The Power Stick's build quality is robust, and the buttons feel certifiably chunky. It doesn't have any other options like the NES Advantage, however – it behaves just like a regular control pad, so turbo is out of the question.

Price: $24.99 **From:** retro-bit.com

The Book of Mario

Fans of Nintendo's iconic plucky plumber should be well at home with out latest compendium. It features all the excellent *Mario*-themed content from our previous issues, alongside some new treasures. The likes of The Ultimate Guides To Paper Mario and Mario Odyssey, along with Mario: Master Of Spinoffs, have never been seen before by **RG** readers, so be sure to pick it up!

Price: £12.99
From: myfavouritemagazines.co.uk or all good retailers

Space Invaders Snapback

At the time of writing this, **Retro Gamer** HQ is experiencing a bit of a heat wave. Darran's turned into a puddle, Nick's burst into flames and Sam's clinging onto the bit of shade he has, but Drew's fine. Why? It's because he's rocking this nifty *Space Invaders* hat, keeping the sun at bay, and he's looking pretty sharp while doing so. [Ed: Drew, stop flaunting yourself up in the mag!]

Price: £16.99
From: numskull.co.uk

Pokémon tees

Do you visit various *Pokémon* forum threads dissecting Junichi Matsuda's Twitter location data to find 'clues' as to where the next *Pokémon* will be set? Do you spend your weekends gathering raid parties for *Pokémon Go*? Do you know what a Pikachu is? If the answer to any of these is, 'Yes **RG**, you fools,' then this set of T-shirts from Insert Coin are for you.

Price: £22 each **From:** insertcoin.com

Here's my bio... Paul Rose
Paul Rose is probably better known as Mr Biffo – the creator and chief writer of legendary teletext games magazine *Digitiser*. These days, he mostly writes for kids TV, but can still be found rambling on about games, old and new, for his daily website, Digitiser2000.com.

Growing up

I sometimes have a love-them/hate-them relationship with old games. That might not be a terribly wise admission to make in a magazine dedicated to the love of old games, but I've made peace with it, and that's okay.

So here's my confession: I often find early games to be borderline unplayable. Heck, compared to modern games, many of the ones I grew up playing are fundamentally broken.

A lot of it is a holdover from the tropes and mechanics established in the arcades; the limited lives and continues were there to ensure people kept funnelling money into the machine. It made little sense by the time games came home, and it took a while for developers to realise how frustrating this was for many of us.

Even at the age of 13 I struggled to finish many games, because there was no save function, or I'd used up all my lives. I never had the patience to play through games over and over. For me, the appeal of gaming was more about the exploration than racking up high scores or competing against another person.

Some of my other issues with early games stem from the hardware. Frankly, that Atari 2600 joystick is a stiff, unresponsive, monstrosity, and playing anything on a ZX Spectrum keyboard – oh, let's map all the navigational and action buttons to be all on the same row, geniuses! – is an exercise in masochism.

This was inevitable. Videogames were straining at the limitations of their host hardware, and their creators' imaginations often outstripped what was technically possible at the time. I admire what was achieved given the boundaries they were working within.

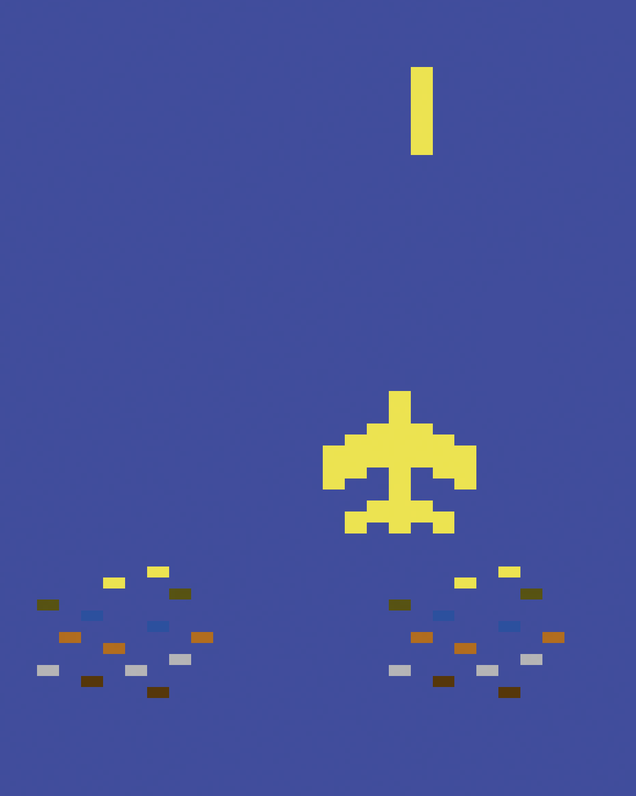
It's churlish to criticise early motion pictures because the characters didn't talk, and kept hanging off of clocks and that, and there were no CGI aliens, and I view early games the same way.

Of course, what's different is that I was there when games took their first faltering steps. As old as I am, I'm not old enough to have an emotional connection to Charlie Chaplin (though I've got a bit of a soft spot for Harold Lloyd, due to his adventures being shown on BBC2 in the Eighties).

However rough around the edges games might've been back in the day, we didn't know any better. They were all we had. I dunno if it's a form of Stockholm Syndrome, but I persevered with games in spite of what would later to be exposed as their flaws, and I loved them regardless.

I fell in love with their potential, and I'm glad I didn't bail on the relationship too soon. Getting to watch games blossom into what they are today, to grow beyond those formative limits, is as much a part of my love for them as anything else. It's more complex for me than simple nostalgia.

I struggle to put it into words, but I feel a certain pride towards these old games, the same as I do with my children, watching them grow up – being part of their journey – and seeing them fulfil their seemingly untapped potential. *



Do you agree with Paul's thoughts? Contact us at:

RetroGamerUK  @RetroGamer_Mag  darran.jones@futurenet.com 



Talking text

With IFComp coming on 1 July, we spoke to organiser Jacqueline Ashwell to learn more

In 2003 Jacqueline founded and ran IntroComp, a competition for creators to develop interactive fiction excerpts and get feedback. Jacqueline is also the creator of *The Fire Tower*, an IF game based on her own experiences as a park ranger.

What is IFComp and what is its overall purpose?
IFComp, formally The Annual Interactive Fiction Competition, is a game design competition that welcomes all kinds of text-driven digital stories and games, which are made freely available in order to encourage the creation, play and discussion of interactive fiction.

For the sake of the competition what counts as IF?
The IFComp defines interactive fiction in fairly broad terms as videogames whose player interactions centre on text. We've watched interactive fiction evolve over the decades, and we're not out to constrain that evolution.

The competition has been running since 1995, how do you feel it, and other competitions, have affected the IF landscape?
The competitions give authors two key things: structure and venue. Anyone at any time can write and release anything they want to. Some people need a deadline to make that passion project happen, and the comps provide that. Some people, left unchecked, will endlessly add to the scope of their game, to the point that it would never see the light of day, and the comps can help constrain that sprawl. Some people don't know how to promote their game, and the comps help with that.

YOU: Be impressed later. We got a situation on our hands.

DEPUTY: *(looking down)* I see nothing but cow-leather gloves on our hands.

YOU: Them McBirdford Brothers have flown back into town and I reckon they're fixin' to do some crimes. Follow me.

(You are now on the other side of town and also on a horse. The buildings here are much taller and there are barrels full of water all over the place. A crowd of bystanders is gathered around, all pointing at the bank.)

DEPUTY: A disturbance at the money depository.

YOU: Reckoned as much. Let's mosey.

(The two of you get off your horses and start moseying towards the bank.)

MCBIRDFORD #1: Do not mosey any more paces forward, sheriff!

(One of the McBirdford brothers steps out of the bank and points his shotgun at the crowd.)

MCBIRDFORD #1: Or else all the bystanders will be made to die.

DEPUTY: Sheriff, this is a situation of great danger. In what manner should we proceed?

» IFComp was originally known as The Annual Interactive Fiction Competition.

The IFComp has an interesting prize pool system, where donors can enter prizes ranging from cash to food to professional services. Can you give us some examples of the best prizes to be put in the pool?
We've had a pretty awesome spread of prizes over the years, from Punjammies to localising your game into another language. In 2015, Etienne Vouga made a very generous $1,000 donation, which he split up and spread among the top 40 winners. That was actually the inspiration for the Colossal Fund, which we began last year as a way to reward entries parallel to the prize pool.

Have any games made for the competition broke out into the wider market?
I think it is not unfair to state that doing well in the IFComp has helped to lend weight to the CVs of some creators who have gone on to be commercially successful, such as Emily Short, Jon Ingold, and Andrew Plotkin. There are particular IFComp entries such as *Shade*, *Lost Pig*, *Photopia*, and *Howling Dogs* that are now recognised as seminal works of interactive fiction. And then there are works such as Brendan Patrick Hennessy's *Birdland* that have a gained tons of fans outside the IF community.

July 13th, Morning. Canoe Dock.

(Dan, the canoeing instructor, is giving a lecture from the dock. An assortment of campers sit in front of him, straddling logs and holding their paddles off to the side as if they were actually sitting in canoes. The boats themselves sit pristinely up on the racks, looking like they've never been in the water.)



DAN CANOE: ...It's all about respect. You have to respect the paddle. Be one with the paddle. Treat the paddle like a lover. Or, if you prefer, a close friend. Most of all, you've got to stay calm and centred. The paddle can sense anxiety and if you bring a nervous energy into the canoe the paddle will betray you.

(The campers stare at him blankly.)

DAN CANOE: Now. *(He picks up a paddle.)* Today we're going to be practicing some basic strokes. Remember to grip the handle firmly and make calm, deliberate motions. Any questions?

(You raise your hand.)

DAN CANOE: Bridget.

- When do we actually start canoeing?
- I'm a little worried about tipping over.
- When you say the paddle can sense anxiety...

» If you love text adventures then the IFComp is the perfect place to showcase your skills.

> **"Anyone at any time can write and release anything they want to"**
> Jacqueline Ashwell

So what are your plans for IFComp now that you're in the driver's seat?
I'm planning to focus on feedback and reviews. Last year we asked people to provide feedback with their votes. This year we will coach them a little bit on how to make that feedback more useful to authors. I am also mulling over some sort of incentives for thoughtful reviews.

What advice would you give to anyone reading this who wants to take part?
If you're reading about IFComp for the first time, I would probably caution you against being an author this year. Start out as being a judge. Download the games when they're released this October. Play, vote, provide feedback to authors. Write reviews, either on your blog or on the Interactive Fiction Database (the IMDB of IF). We do want your games, though, when the time is right. Good luck! *

Your apartment, at the desk

*** SHADE ***
A brief story by "Ampe R. Sand" (Andrew Plotkin)
First-time players should type "about".
Release 3 / Serial number 001127 / Inform v6.21 Library 6/10

Odd, how the light just makes your apartment gloomier. Pre-dawn darkness pools in the corners and around the tops of walls. Your desk lamp glares yellow, but the shadows only draw your eyes and deepen.

Not much of an apartment, no. One desk, paper-piled, with a dusty computer shoved to the side. Your futon. Second-hand stereo sitting on a cardboard crate. A kitchen nook one way and a bathroom nook the other, with a closet to the side. A broad mirror tries to make the place seem twice its size; it halfway works. One window, whose shade is down, and the front door firmly shut.

Your luggage is piled untidily by the door. A potted hyacinth sits beneath the window.

You are sprawled on the futon, staring up into that gloom. Your eyes feel gritty. But it's too late -- early -- no time left for sleep, anyway. In a few hours your ride will arrive.

On the desk are your to-do list and a travel book.

>take travel book
You won't accomplish much while slumped on the futon. That's been getting slowly more apparent for hours now.

» Text adventures may have falling out of favour with the mass public, but there's still a love for them.

BACK TO THE NOUGHTIES

JUNE 2001 – The mid-year slump kicks in, with few games being released, fewer worth playing and fewer still actually hitting the UK. Nick Thorpe looks back and remembers why he stuck to Magic: The Gathering that summer…





[PS2] Concerns about longevity didn't prevent Acclaim's PS2 conversion of *Crazy Taxi* from making crazy money.

NEWS JUNE 2001

Ten members of the Nepalese royal family were killed during a massacre at the Narayanhity Royal Palace on 1 June, including King Birendra of Nepal and Queen Aishwarya. The killings were perpetrated by Crown Prince Dipendra, reportedly due to animosity over a marriage dispute, before he shot himself in the head. Dipendra was subsequently declared king while still in a coma, but died three days later. The throne then passed to the newly crowned King Gyanendra.

The UK held a general election on 7 June, postponed from its original date in May due to the foot and mouth disease outbreak earlier in the year. Tony Blair's Labour party won another comfortable victory, winning 40.7% of the popular vote and 413 of 659 seats in the House of Commons. The Conservatives under William Hague were still suffering from divisions over Europe, and made a net gain of just one seat for a total of 166.

American terrorist Timothy McVeigh was executed by lethal injection on June 11. With the assistance of Terry Nichols, McVeigh had carried out the Oklahoma City bombing in 1995, killing 168 people and injuring over 680 others. McVeigh remained remorseless up to his execution, stating,"If there is a hell, then I'll be in good company with a lot of fighter pilots who also had to bomb innocents to win the war."

THE LATEST NEWS FROM JUNE 2001

It's pretty common to see the games market slump a bit during the summer, but 2001's mid-year lull was unusually brutal. With the PlayStation 2 still finding its feet, the Xbox and GameCube still yet to arrive and the PlayStation, Dreamcast and N64 getting ready to retire, developers didn't have any great options. As a result, magazines turned to imports and re-releases to help fill their pages.

Play had the big scoop – an import review of the hotly anticipated *Gran Turismo 3: A-Spec*. Reviewer Mark Crawley awarded the game 91%, stating that "for most intents and purposes (especially high-thrills racing) it is superb" and that it "serves to show Sony's black box as the powerhouse we were originally promised". However, he reserved criticism for the wide reuse of *Gran Turismo 2*'s content, noting that racing the lower ranked races in *Gran Turismo* mode was a "depressingly tedious prospect" for series veterans, and that, "Those hoping for a distinct title could come away a touch disappointed by what is really *Gran Turismo 2* plus."

Other notable PlayStation 2 releases for the month were largely reheated Dreamcast leftovers. *Crazy Taxi* (7/10 *Edge*, 79% *Play*) was praised for its high-speed thrills and close conversion work, but scorned for being light on content and arriving after the announcement of a Dreamcast sequel. *Fur Fighters* (8/10 *Edge*) received a lick of cel-shading paint and a new level for its move to Sony's console, and *Resident Evil: Code Veronica X* (85% *Play*) got some extra cutscenes. *Winning Eleven 5* received 9/10 from *Edge*, but wasn't yet available outside of Japan. The only original game worth looking at in the UK was *Formula One 2001*, which received 93% from *Play*'s Phil King due to its "groundbreaking realism, intelligent opponents and top playability."

But while PS2 owners might have been starved of originality in the present, the preview pages at least showed some promise of a brighter future. *Silent Hill 2* was a sequel, but one with plenty of dark promise – *Edge*'s experience was that it was "terrifying, and at times it's uncomfortable to play." *Ka* would soon offer players the chance to take control of a mosquito and terrorise a Japanese family, and Revolution's *Good Cop,*

[PlayStation] She's dressed as a cat and she's called Kat. They were clearly going for subtlety here.

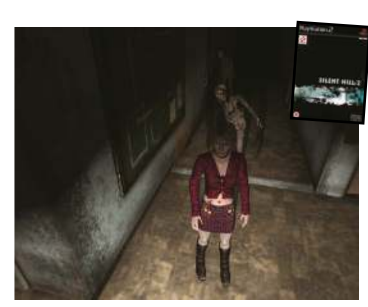


[PC] Westwood finally shifted the RTS genre into 3D, but there was little innovation to be found in *Emperor*.



[Dreamcast] Lightgun owners finally received a worthy companion to *House Of The Dead 2* with *Confidential Mission*.

[PS2] After unimaginable hype, *Gran Turismo 3* had finally arrived – for Japanese customers, that is.



[PS2] *Silent Hill 2* showcased dingy environments but a bright future for the PS2.

Bad Cop saw the studio making a bold move into more action-focused territory. Then there was *Red Faction*, a first-person shooter with a key selling point of environmental destruction – one which *Play* felt "works with more impact visually, aesthetically and aurally than we could have hoped".

Of course, players on other formats hardly had it any better. *N64 Magazine* reviewed two UK releases – the first being *Aidyn Chronicles: The First Mage*, a frustrating but deep RPG that scored 60% with the warning that, "Most of us should steer well clear, but if you simply *must* have an RPG no matter what we say, you could do a lot worse." The other was *Indiana Jones And The Infernal Machine*, which scored a much better 81% and promptly never actually came out over here in the UK. And with the magazine noting that the GameCube had pinched previously N64-bound games including *Resident Evil Zero*, *Eternal Darkness* and *Dinosaur Planet* (now rumoured to feature the *Star Fox* cast), the situation wasn't going to improve.

Over on the Dreamcast, players were treated to a conversion of *Unreal Tournament*, which got 6/10 from *Edge* on the grounds that "it's hard to get enthusiastic about a game which was done much better on the PC 18 months ago". *Confidential Mission*'s spy-themed lightgun action offered a different shooting experience – "highly enjoyable" but "not the longest, even by genre standards" according to *Edge*, which gave it 6/10. *Dreamcast Magazine*'s Martin Mathers was rather more enthusiastic, asserting that there was "plenty more besides the arcade mode to keep you busy" and giving the game 89%. Importers could try out the survival horror game *Illbleed* (*Edge* 6/10), in which you wandered around a malevolent theme park trying to rescue your friends. Still, this was more than the PlayStation had to offer – the most notable game was an import-only revival of Taito's old game *Puzznic* (*Play* 72%).

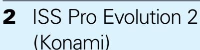
With the consoles in a slump, could the PC tempt gamers for a summer fling? In short, no. The month's most high-profile release was *Emperor: Battle For Dune*, a real-time strategy game from genre pioneer Westwood. *Edge* was surprised at "just how firmly the game sits within the established limits of the RTS formula" and took it as proof that "the RTS genre is essentially moribund," settling on a 5/10 score. *PC Zone* broadly agreed, writing the game off as "more new levels for *Tiberian Sun* and a few more units to boot" in a 76% review. *PC Zone*'s best game of the month was *Tribes 2* at 87%, a team-based first-person shooter which the magazine felt to be "a vat of undiluted fun for team players" but "too focused on team tactics".

Perhaps all of this was a conspiracy to make players go outside, enjoy the sun and play the newly-launched Game Boy Advance. Then again, probably not… *



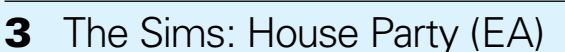
JUNE 2001

PLAYSTATION



1. The Simpsons Wrestling (EA)
2. ISS Pro Evolution 2 (Konami)
3. LMA Manager 2001 (Codemasters)
4. Rugrats In Paris (THQ)
5. Time Crisis: Project Titan (Namco)

PC

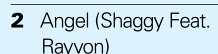


1. Black & White (EA)
2. Cossacks: European Wars (CDV)
3. The Sims: House Party (EA)
4. The Sims (EA)
5. Championship Manager 00/01 (Eidos)

GAME BOY COLOR

1. Pokémon Gold (Nintendo)
2. Pokémon Silver (Nintendo)
3. The Simpsons: Treehouse Of Horror (THQ)
4. Pokémon Yellow (Nintendo)
5. Pokémon Trading Card Game (Nintendo)

MUSIC



1. Lady Marmalade (Christina Aguilera, Lil' Kim, Mya & Pink)
2. Angel (Shaggy Feat. Rayvon)
3. There You'll Be (Faith Hill)
4. All I Want (Mis-Teeq)
5. Another Day In Paradise (Brandy & Ray-J)

THIS MONTH IN…



Edge

"I read in an interview that they said they're going to put *Sonic* on GameCube. I don't think anyone will care," said *System Shock 2* designer Ken Levine, evidently unimpressed with Sega's decision to support Nintendo. *Sonic Adventure 2 Battle* went on to become one of the best-selling GameCube games, selling well over 1.5 million copies.



N64

"Butterfly-catching? Furniture shopping? *Dogs playing guitars?* Yes, it's tricky to get excited about *Animal Forest*," said *N64 Magazine*'s big preview. Indeed, it was tricky to get excited about the game we now call *Animal Crossing* – but that's mostly because Nintendo declined to give it a UK release until 2004, when it debuted on the GameCube.



Play

Reader Nic suggests in *Play*'s letters page that arguments over whether sequels improve on the original games can be solved by making prequels instead. "Instead of making *Gran Turismo 3*, a new game could have been made in which horses and carts raced," said he, in that innocent time before the release of *Circus Maximus: Chariot Wars*.

» RETROREVIVAL

Sindbad Mystery

ROLLING STONES WILL BREAK YOUR BONES

» SG-1000 » 1983 » SEGA

I'm the sort of person that's occasionally grabbed by strong completionist urges – seemingly at random, and often to my own detriment. I don't have all the *Sonic* games, but I had to get all the endings in *Shadow The Hedgehog*. I own all the *Fear Factory* albums, including the rubbish ones, such as *Transgression*. So for a little while now, it's been bugging me that I don't own an SG-1000.

"But why, Nick? What do you even want to play?" Well, there's a good version of *Zaxxon*, I'm really partial to *Rock N' Bolt*, and *Sindbad Mystery* is a really cool maze game. You walk around picking up fragments of a map, which reveal the location of the stage's final treasure. But there's more to it than that – there are crisscrossing paths across multiple levels, you can run over the baddies with a giant boulder, and you can even trap them by digging holes. There are a few different stages too, so it doesn't become quite as repetitive as other games in the genre. It's a game I would like to own.

Unfortunately, the SG-1000 is a somewhat expensive bit of hardware, and I'd need to seek out a PAL model or mod a Japanese one for RGB video, so my best option is to get a Japanese Master System, which is backwards compatible. But if I buy any more Master Systems, I will look like a mad person [As if having five is perfectly sane? – Ed.] Maybe I'll just have to get the Saturn version on *Sega Ages Memorial Selection Vol 2* instead… *







TOP
27600

PLYR.1
27600

PLYR.2
0

MAP

BONUS
4800

RD. 2



Inside the Mega Drive

When Sega set out to replicate its arcade hardware in an affordable form, it ignited a console war and captivated a generation. Retro Gamer speaks to key developers to learn about the technological factors that made this 16-bit console a classic...

Words by Nick Thorpe

If there's one thing that characterises Sega during its years as a console manufacturer, it's a relentless pace of technological development. By the middle of 1986, the company had put together the SG-1000, an exterior redesign in the form of the SG-1000 Mark II and the vastly upgraded Mark III. The design of the Master System, the export version of the Mark III, was finished and manufacturing had started. Having released four pieces of hardware since 1983, it might have seemed like Sega should take a break. However, none of the company's releases had helped it to claw market share away from the dominant manufacturer, Nintendo.

To try to make an advance in the market, Sega began work on a 'Mark V' console designed to achieve a true generational leap. In the book *Sega Mega Drive/Genesis: Collected Works*, Masami Ishikawa explains that the primary goals in producing the Mega Drive were to retain compatibility with the Master System, and to provide the basic performance of its relatively new System 16 board. This board was already powering hit games like *Fantasy Zone*, and would remain an active part of Sega's development plans for the remainder of the Eighties, hosting games such as *Shinobi*, *Alien Syndrome*, *Altered Beast* and *Golden Axe*. This project would ultimately become known as the Mega Drive (or Genesis, in North America).



MEGA FACT

■ The Mega Drive hardware formed the basis of three Sega arcade boards: Mega-Tech and Mega Play ran Mega Drive games and System C-2 hosted new ones.

Sega Superstars

The developers who made the Mega Drive shine

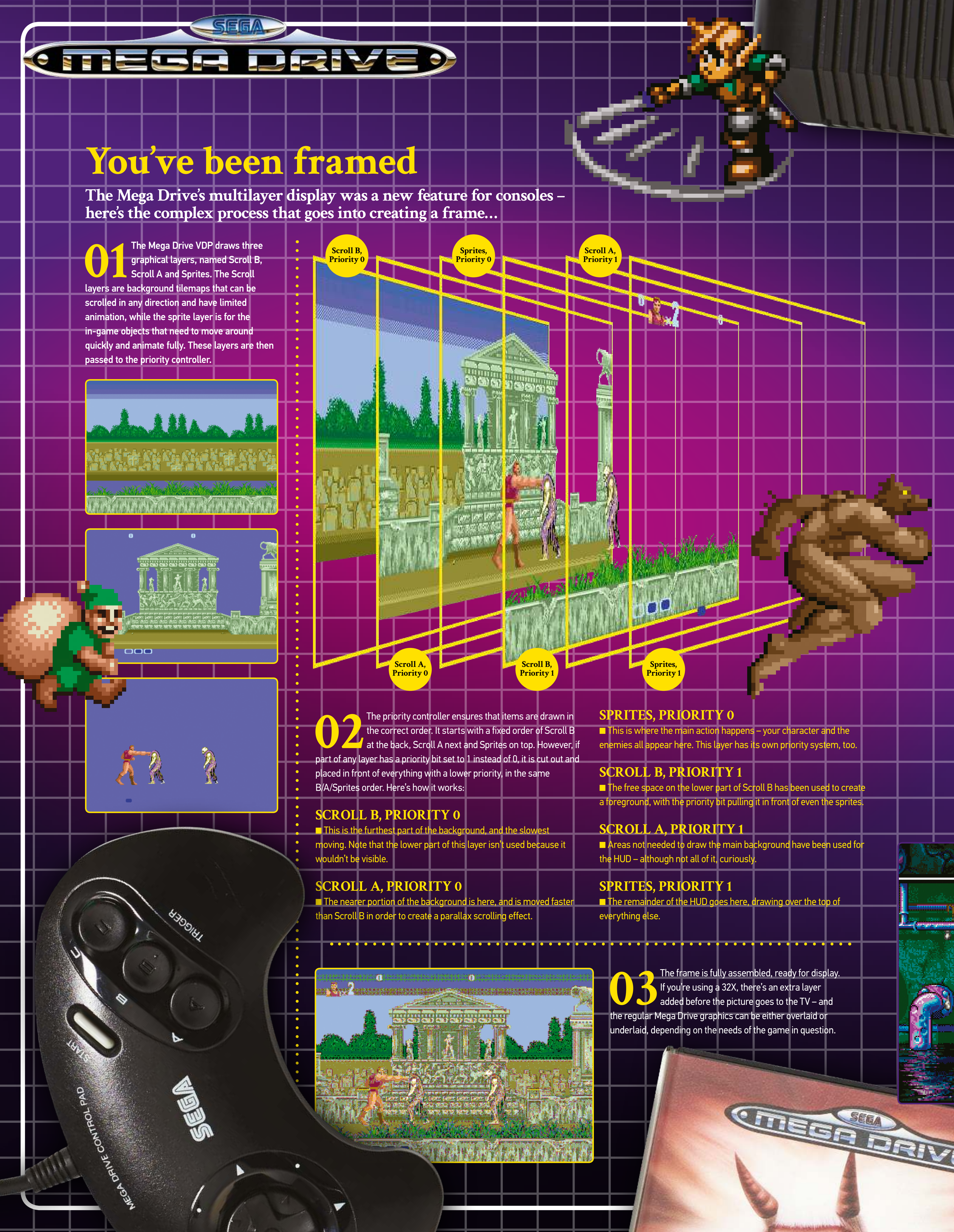
Rieko Kodama
Artist and director, Sega (during the Mega Drive years)

Trip Hawkins
Founder of Electronic Arts

Mark Cerny
Founder of Sega Technical Institute and programmer

Matt Phillips
Director of Big Evil Corporation

Takashi Iizuka
Game designer (Golden Axe 3, Sonic 3, Sonic & Knuckles)



You've been framed

The Mega Drive's multilayer display was a new feature for consoles – here's the complex process that goes into creating a frame…

01 The Mega Drive VDP draws three graphical layers, named Scroll B, Scroll A and Sprites. The Scroll layers are background tilemaps that can be scrolled in any direction and have limited animation, while the sprite layer is for the in-game objects that need to move around quickly and animate fully. These layers are then passed to the priority controller.

02 The priority controller ensures that items are drawn in the correct order. It starts with a fixed order of Scroll B at the back, Scroll A next and Sprites on top. However, if part of any layer has a priority bit set to 1 instead of 0, it is cut out and placed in front of everything with a lower priority, in the same B/A/Sprites order. Here's how it works:

SCROLL B, PRIORITY 0

■ This is the furthest part of the background, and the slowest moving. Note that the lower part of this layer isn't used because it wouldn't be visible.

SCROLL A, PRIORITY 0

■ The nearer portion of the background is here, and is moved faster than Scroll B in order to create a parallax scrolling effect.

SPRITES, PRIORITY 0

■ This is where the main action happens – your character and the enemies all appear here. This layer has its own priority system, too.

SCROLL B, PRIORITY 1

■ The free space on the lower part of Scroll B has been used to create a foreground, with the priority bit pulling it in front of even the sprites.

SCROLL A, PRIORITY 1

■ Areas not needed to draw the main background have been used for the HUD – although not all of it, curiously.

SPRITES, PRIORITY 1

■ The remainder of the HUD goes here, drawing over the top of everything else.

03 The frame is fully assembled, ready for display. If you're using a 32X, there's an extra layer added before the picture goes to the TV – and the regular Mega Drive graphics can be either overlaid or underlaid, depending on the needs of the game in question.

MEGA FACT

■ The largest official Mega Drive cartridge is *Super Street Fighter II: The New Challengers*, at a whopping 40Mbit (5MB) – over the theoretical 32Mbit maximum.

"I did not care for the NES because of its 8-bit limitations and the draconian licence agreement"

Trip Hawkins

The most significant decision Sega took during the development of the Mega Drive was its choice of CPU. Again in *Collected Works*, Masami Ishikawa notes that this was the most important component choice issue – the hope was to use the popular Motorola 68000 CPU, the 16-bit CPU from which the System 16 gained its name. Introduced as a high-end part in the late Seventies, the processor was in mass use by the late Eighties. The big attractions such as *Hang-On* were using two 68000s per board, but the more economical System 16 board introduced in 1986 used just one.

However, the cost of the chip forced the hardware designers to consider an 8-bit alternative. Even the Atari ST, marketed as offering "power without the price" was over £200 at the time. The Mega Drive's retail price of 21,000 yen was less than half of that, roughly £95 in late 1988. In the Japanese book *Sega Consumer History*, hardware designer Hideki Sato explained that the issue ultimately came down to negotiations with Signetics, which manufactured 68000 CPUs. Sega had asked for a very low price, and eventually secured it for a blanket order of 300,000 chips.

For programmers and engineers, securing this CPU was crucial. Mark Cerny, who had spent much of the late Eighties in Japan programming games for the Master System was also enthusiastic. "It was wonderful to be able to use a 68000 CPU. I'd had some experience with them back when I was making arcade games – for example, *Marble Madness* was based on another member of the 68000 family – and had really been missing the straightforward programming model and high performance."

For Trip Hawkins, founder of Electronic Arts, it was even more important. The company was a leading publisher of computer games, but as prices remained high and manufacturers failed to embrace the consumer market, it became clear that consoles were going to take over the market. The problem was the console market leader. "I did not care for the NES because of its 8-bit limitations and the draconian licence agreement and I also suspected, correctly as it turned out, that Nintendo would milk it for too long and leave the 16-bit door wide open," Trip recalls.

At the time, we felt that Nintendo had really opened a window of opportunities for other platforms by not shipping the Super NES in the US until 1991," Mark agrees. "Console sales peak around Christmas and New Year, and we had two full holiday seasons to show the US audience what the Mega Drive could do before the Super NES ever showed up!" From Mark's perspective within Sega, it makes sense that the Mega Drive would be the best choice to take advantage of the 16-bit open goal. But from the outside, electronics giant NEC and its PC Engine/Turbografx console could have seemed like the safer bet. Trip didn't believe so, though. "I never considered NEC a consumer company and never considered the Turbografx a real 16-bit system," he explains. "From a marketing and software standpoint I knew that NEC had no chance against either Nintendo or Sega."

Ultimately, EA's backing was won on technical grounds. "Sega's design that included the MC-68000 along with separate graphics and sound chips, two joysticks and a price under $200, was exactly what the market needed," asserts Trip. "Way back in 1978 I led Apple's pivot to the office desktop market and was tasked to work with Steve Jobs on the hardware spec for a 16-bit system. We both loved the Motorola MC-68000 and it went into the Lisa and Mac. When I founded EA we bought Sun workstations for our best developers and they also had the 68000," he explains. The CPU perfectly fit the company's focus on home computers, too. "We had extensive experience and an enormous code base for the 68000 and had a great deal of content that also knew how to take advantage of a GPU and sound chip."

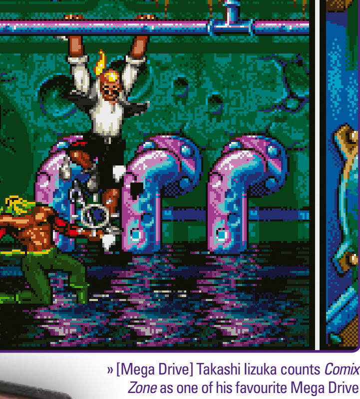
Matt Phillips is a developer with credits including *Homefront: The Revolution* and *Lego City: Undercover*, whose love for his first console has led him to develop the original Mega Drive game *Tanglewood*. "It's relatively very simple compared to the likes of Xbox One and PS4, which is both a curse and a blessing. Coding needs to be done to-the-metal, the machine has no operating system, no device drivers, and if you'd like to squeeze any kind of performance out of its tiny 7MHz CPU then everything needs to be done in raw

» [Mega Drive] Clever use of the Mega Drive's scrolling layers allowed for this giant airship to appear.

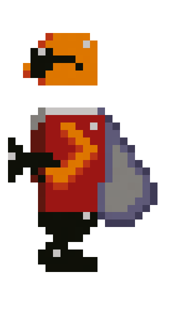


» [Mega Drive] Mastery of the Mega Drive's custom VDP led to cool graphical effects like these light shafts.





» [Mega Drive] Takashi Iizuka counts *Comix Zone* as one of his favourite Mega Drive games, but has never played the final game.



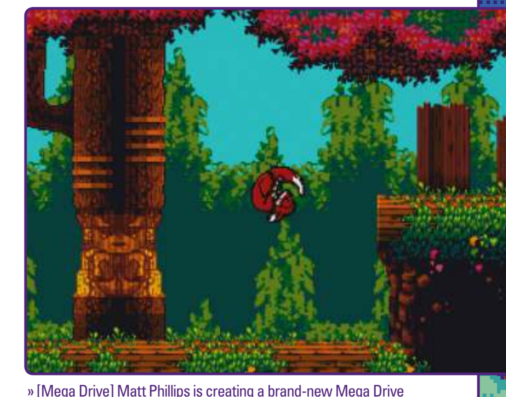
"I was very excited to work on a system which had new features"

Rieko Kodama

▶ assembly language." When asked about the console's strengths, he concurs with those who were there at the time: "The 68000 processor, without a doubt. It was an excellent choice for a games machine of the time, and I still keep finding things about it that impress me even today."

The 68000 CPU was a huge part of what made the Mega Drive work. Its adoption allowed everyone from Japanese arcade coders to European developers to transition to the machine smoothly. What's more, it was a powerhouse for its time – after all, this was a proper arcade CPU in a home console. Though the CPU's fast clock speed has been spun as a major advantage over the SNES and its Ricoh 5A22 CPU, the truth is that the two machines process a similar number of instructions per second – but that in itself is impressive, given that the SNES arrived two whole years later. However, the 68000 did possess real speed advantages in the form of a wider data bus, faster memory bandwidth and faster arithmetic performance.

While the CPU benefited from familiarity, Sega created a custom visual display processor (VDP) for graphics, an evolution of the Master System's VDP. "I was very excited to work on a system which had new features. I remember when I saw the Mega Drive board for the first time, this was before it was made more compact, it was bigger than the table," remembers Rieko Kodama, a veteran artist whose graphics appear in Mega Drive games such as *Altered Beast*, *Sonic The Hedgehog* and *Phantasy Star IV*. "The most exciting feature for me was the enhanced colour variation. I'd imagined that it would be much easier to draw three-dimensional objects now, which was difficult on the Mark III/Master System." That may sound odd to readers who know that the Mega Drive's colour capabilities are relatively weak, but as Kodama points out, it was still an upgrade: "It was limited, but I can't complain compared to the number of colours with the Mark III and Master System."



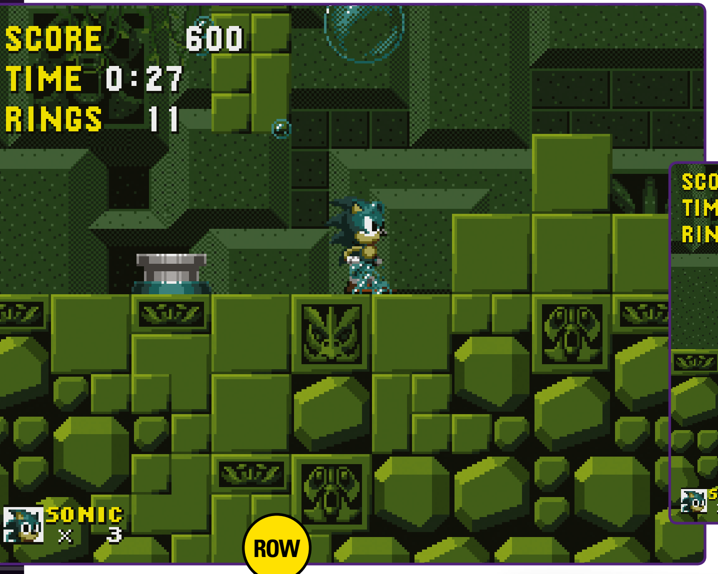
» [Mega Drive] Matt Phillips is creating a brand-new Mega Drive game, *Tanglewood*, using old-school techniques and hardware.

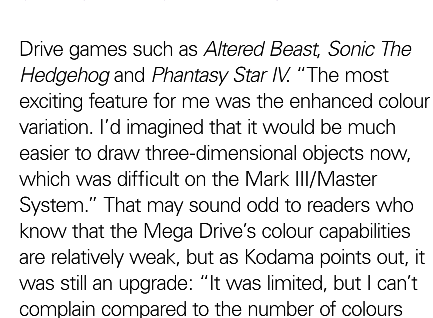
The Mega Drive didn't just show more colours than the Master System. Its display resolution was 45% higher, it could display up to 80 sprites, and it had four times the graphic RAM, allowing for more unique tiles to be held in data. The Mega Drive could also display two background layers alongside sprites, and was capable of manipulating them with a priority system and line scrolling for further complexity. "It became possible to show depth," says Kodama. "With two-layer scrolling and rastering and so on, we were able to create roads with depth in driving games, or show floating under water. Talking about my work, the Labyrinth Zone in *Sonic The Hedgehog* used these features. I think we were able to add a little more weight to Sonic's movements. I hope you've enjoyed the underwater action and the atmosphere of the labyrinth."

For Matt, the Mega Drive's graphical capabilities have been a constant thorn in the side. "The small video memory has been the project's Achilles' heel. What makes it worse is that the machine was originally designed to support twice the amount – the graphics chip supports 128KB of VRAM," he says. "I believe it was cut for cost reasons, and I think that was a big mistake." This was a decision made late in the hardware design process – the larger capacity had been experimented with, but the benefits were felt to be merely incremental gains. It's also worth noting that by mid-1988, a RAM shortage caused prices to quadruple since the beginning of the year."Another issue is its very limited palette size," Matt continues. "It can only display 61 colours at a time (excluding a shadow mode and some hardcore tricks). Thankfully I've been working with artists who have managed to squeeze the very best out of so little, but it's not been easy."

The actual process of creating art for the Mega Drive varied from company to company. At Sega's internal studios, the increased artistic demands changed the development process. "Compared to the Mark III/Master System days, we certainly increased development time and design staff. As ROM capacity increased, so did the work for the designers," recalls Kodama. "However, we now had less pressure with the number of colours and how to draw the objects, since we had more leeway from an artistic point of view due to the evolution of the new system." Artists at Sega used a custom workstation known as the Sega Digitizer System. This hardware, which had evolved through the SG-1000 and Master System generations, consisted of a graphic tablet and a puck, a light pen for working with the screen, and two CRT monitors.

» [Mega Drive] American and European copies of Sonic didn't include the line scroll effect Rieko Kodama mentions…





» [Mega Drive] …the Japanese game uses it to create wavy distortions that convey the feeling of being underwater.

MEGA FACT

■ In South Korea the Mega Drive was officially marketed by Samsung, under the names Super Gam*Boy and later Super Aladdin Boy.

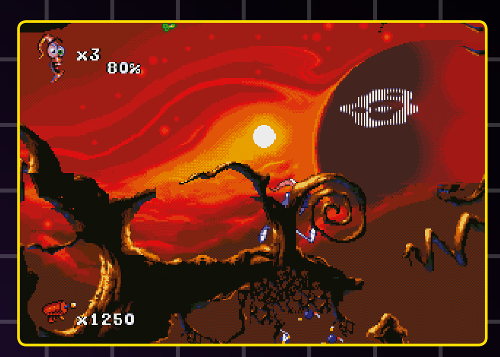
» [Mega Drive] Electronic Arts was a prolific Mega Drive publisher, and built much of its sports empire on the console.

Third-party studios used a variety of solutions, with Deluxe Paint on the Amiga proving particularly common amongst Western devs.

On the audio front, Sega opted for the YM2612 FM synthesis chip from Yamaha, noting in its development manual that it resembled the YM2151 chip used in its arcade games. An 8-bit Z80 CPU was included to drive this chip, which had the dual effect of replicating the System 16 set-up and enabling Master System compatibility. The chip provided six channels of FM sound, a low frequency oscillator to distort those sounds, and the capability to replace one of those channels with a channel for 8-bit digitised audio – often used for speech effects or sampled instruments. That was two fewer channels than the YM2151, and was no big deal compared to what was available in the computer market as any fan of the Amiga's Paula sound chip will tell you. However, this was still a huge advance for console sound. Bear in mind that Sega had ▶

Graphic scenes

Getting the best visuals from the system required artistry, programming and smart hardware use



DITHERING

■ Thanks to the blurry RF and composite connections frequently used during the late Eighties and Early Nineties, nearby pixels would blend together on a TV set to create new colours and transparency effects. Artists used this technique on many consoles, but the Mega Drive's relatively limited colour palette meant it was employed especially frequently.

LINE SCROLL

■ The Mega Drive's graphics hardware can scroll individual parts of a single layer at different speeds. This can be used to create all kinds of unique effects – racing games use it for curves in the road, *Street Fighter II* uses it to add perspective to the ground, *Sonic 2* simulates additional background layers and *Rocket Knight Adventures* uses it for heat distortion.






SHADOW/HIGHLIGHT

■ This hardware feature enabled the brightness of on-screen colours to be modified, and was most often used to create transparent lighting effects, as seen in *Ristar*, *Vectorman* and *Ranger-X*. Because this produces shades outside of the normal Mega Drive palette, it allows developers to break the 64-colour limit – this *Toy Story* cutscene achieves 163 colours.

SCALING

■ The Atari Lynx and Neo-Geo had the ability to scale sprites built into their hardware, and the SNES could scale and rotate a background layer, but the Mega Drive had no such hardware function. However, the machine was in fact capable of producing scaling effects with clever software programming – this image from *Skitchin'* is just one example of that.



POLYGONS

■ Although the Mega Drive didn't have dedicated 3D hardware, the console was capable of producing a limited number of filled polygons using software alone. This was commonly used in flight simulators, as well as a limited number of racing games. *Virtua Racing* doesn't count though, as it used the Sega Virtua Processor enhancement chip.



Under the hood

Take a peek at the chips that power your 16-bit dreams

RAM

■ Two 32KB chips supply the Mega Drive's memory. RAM prices and availability were volatile in 1988, so the PCB is designed to accommodate both wide and narrow chips to hedge against shortages.

MOTOROLA 68000

■ This is the main processor for the Mega Drive, a 16-bit CPU that had been a staple of Sega's arcade games since 1985.

ZILOG Z80

■ This 8-bit CPU is included as a sound coprocessor, though not every game actually uses it. This chip's inclusion is crucial for providing backwards compatibility with Master System games.

SEGA 315-5313

■ This is the visual display processor – the graphical heart of the Mega Drive, which handles two scrolling background layers plus sprites.

YAMAHA YM2612

■ This is the sound synthesiser chip used by Mega Drive games, providing up to six channels of FM sound. Sampled PCM sounds are also supported, for effects such as drum beats and speech.



» [Mega Drive] Konami was one of the many publishers that took a few years to hop on the Mega Drive bandwagon.



» [Mega Drive] *Landstalker*'s isometric visuals were remarkable to Rieko Kodama back in the Nineties.

MEGA FACT
■ Because the Mega Drive removed SG-1000 graphics modes, it can't run the Master System game *F-16 Fighting Falcon* – even with a Power Base Converter.

only adopted FM sound chips in any capacity in 1985, and the FM sound add-on for the Master System (released in 1987) cost more than any standard game for the console.

Two dominant sound engines emerged for the Mega Drive. Sega developed SMPS in Japan, which was compatible with both the Z80 and 68000 but required composers to essentially be programmers as well. Sega's American branch had GEMS (Genesis Editor for Music And Sound Effects) developed, which supported a sequencer setup that was much easier on composers. This became used in many non-Japanese games. However, many third parties chose to use their own sound engines – Krisalis wrote a popular engine licensed to a number of developers, EA and Accolade both created their own tools, and Namco and Konami did the same in Japan.

The Mega Drive was designed for a range of connection options, most of which were previewed but never reached the market. These include a graphics tablet, a keyboard, a printer and a floppy disk drive. The one that mattered the most was the control pad. This went through a variety of designs, but all sketches included two major features – a three-button layout which took after the arcade JAMMA standard, and a curved design, quite unlike most official pads beforehand. This enabled designers to implement greater control complexity than in other console games, but it wouldn't suffice for the entire generation and a six-button model was introduced in 1993.



» [Mega Drive] American development studios like Sega Technical Institute were essential to satisfy demand for games.

"The biggest early driver of hardware sales was Sonic"
Mark Cerny

But for all of the Mega Drive's technical capabilities, the system is nothing without its games. "The software sells the hardware – if there are no good games then of course the console will not be a success," Mark reminds us. Though Sega would still develop many games in Japan, one of Sega Of America's major innovations was to establish local development studios to better cater for non-Japanese tastes, which would prove to be vital as the machine was vastly more popular outside of Japan.

Japanese designers were aware of the Mega Drive's international success, but continued to work as normal. "I felt its popularity in the West when I heard about *Sonic*'s very good sales. At the time, I also heard that *Phantasy Star* was more popular in the West than in Japan," says Kodama. "That didn't have any particular influence on our design choices, but for creatures such as dragons that appear in RPGs, I bought and referred to illustration compilations from *Dungeons & Dragons* to HR Giger. So, you could say in general I was affected by Western illustrations and design."

Mark was at the forefront of the American development charge as he set up the Sega Technical Institute, which would go on to produce games including *Kid Chameleon*, *Sonic The Hedgehog 2* and *Comix Zone*. Other American studios included Sega Interactive and Sega Midwest Studio, and Sega would often contract external studios including BlueSky Software. Interestingly, despite having developed recognisable games, Mark remains unsure of the significance of the US-based teams in the Mega Drive's success. "The biggest early driver of hardware sales was *Sonic The Hedgehog*, which was developed at Sega headquarters in Japan," he explains, indicating a preference for the killer app theory. "The Sega Technical Institute and other US-based teams did some later work and helped keep the momentum going, but I suspect that the apart from the *Sonic* sequels, the impact of our efforts was pretty minor compared to that initial push."

Takashi Iizuka would work on both sides of the Pacific. "The first game I participated in development on was *Golden Axe III*, but I was there more for help and everything was such a new experience to me that nothing really felt 'difficult' to me," explains the game designer, who joined Sega straight out of university. "I did learn many of the limitations of the hardware while working on that title, from not being able to display a lot of sprites on screen, or having only two scrolling layers, or not being able to expand or shrink things," he recalls. "Shortly after that, during the development of *Sonic 3* I learned that all of the limitations can be addressed through the



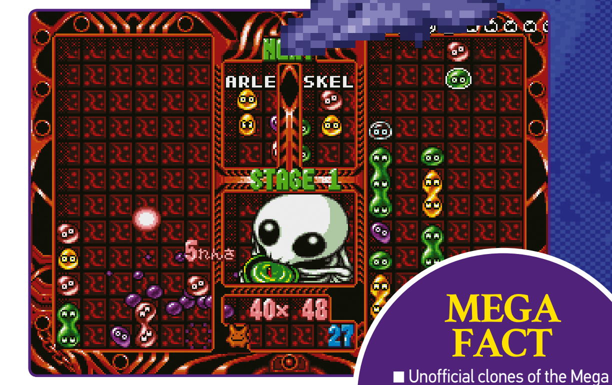
> “We kept our plans secret and had been developing games for a year before our debut at CES”
>
> Trip Hawkins

programmer’s knowledge and ingenuity which unlocked the potential of the Mega Drive.”

Having joined a renowned group of Japanese colleagues at STI, Iizuka was able to aim high. “There were technical limitations to the Mega Drive hardware, but there were also ways of creatively finding a solution. So, when I designed games I never forced myself to consider limitations. If I put these restrictions in place from the beginning, all I would end up doing is limiting my ideas and imagination,” he recalls. “For example, the large airship that flies by in the early part of *Sonic 3* – there was no way the Mega Drive could have displayed a sprite that large, but we were able to display the airship in the game. We did it by removing one scrolling layer in a way one wouldn’t notice a bit before we wanted to show the airship, then we used that extra layer to show this airship flying right past Sonic.”

Still, hardware limitations were far from the only challenge Sega’s designers faced. “People nowadays may find this hard to believe, but we didn’t even have Windows PCs back when we were developing Mega Drive games. Game design all happened with only a pencil and some paper,” Iizuka reveals. “We would draw a map out on graph paper all taped together, then match up the desired map design with the boxes on the graph paper and try and mentally simulate how that would look when digitized for display on a screen.

» [Mega Drive] The arcade board that ran *Golden Axe* used the same CPU as the Mega Drive, albeit at a faster speed.



» [Mega Drive] The *Puyo Puyo* games were easily ported as the arcade games used Mega Drive tech.

The only ones who had access to Sega’s Digitizer were the artists who spent their days drawing pixel by pixel, not the designers.”

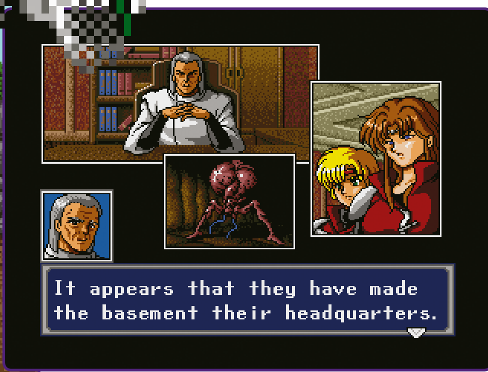
Sega didn’t have the means to satisfy a mass audience alone, so third-party support was crucial. However, it was slow to arrive. By the Mega Drive’s first anniversary in 1989, the only non-Sega games in Japan were *Thunder Force II* and *Super Hydlide*. Third-party releases didn’t become a monthly occurrence until the middle of 1990. At that point, EA would show its hand. “We kept our plans secret and had been developing games for a year before our debut at the June 1990 CES in Chicago,” recalls Trip. EA’s reverse-engineered ‘Sprobe’ development kit enabled the company to get the jump on the competition – but as Trip saw it, the competition wasn’t fierce. “In theory, that gave us a one-year lead; but for the next two years the industry continued to be sceptical about Sega while I was forcing my producers to start at least three new Sega games every month.”

Why did teams shy away from the growing platform? “Of course, all console software companies were counting on Nintendo,” Trip points out, “and many of the computer software companies continued to avoid consoles due to the restrictive licences and costly ROM chips.” Indeed, Sega was not much friendlier to third parties than Nintendo – the company typically wanted to control cartridge production and asked for hefty licensing fees. Sega also had a set of guidelines that prohibited certain themes. As a result, many companies were late entrants into the market.

EA’s demonstration of its ability to create Mega Drive games without a licence earned it major exemptions. “We were not subject to any of Sega’s rules, most of which they had copied from Nintendo. We were entirely outside their program, doing our own thing – we only had to take care in the use of their trademarks in our marketing materials,” Trip explains. EA was able to manufacture its own cartridges (with distinctive yellow tabs) and get around concept approvals, and the company would go on to publish over 100 Mega Drive games between 1990 and 1997. Other companies would eventually get their own deals along these lines – Acclaim and Konami had their own cartridges that followed Sega’s specs, while the likes of Accolade and Codemasters created cartridges with distinctive shapes.

MEGA FACT

■ Unofficial clones of the Mega Drive were in circulation as early as 1993, with the Scorpion XVI infamously appearing on the UK TV show *Bad Influence*.



» [Mega Drive] Amongst her own games, Rieko Kodama counts *Altered Beast* and *Phantasy Star IV* as favourites.

With hundreds of games having been developed for the Mega Drive, we’re curious to know which games caught the eyes of the developers. While Matt cites Mark Cerny and Yuji Naka as programming heroes, it’s a UK development that awes him. “A game that has stuck in my mind is *Sonic 3D*, for its FMV running from cartridge,” he explains. “I’ve been exposed to the delights of ROM access times, and the glitches and lockups caused by trying to stream data from the cartridge too fast. I’ve since learned of the tricks they used to stream that FMV, and it only makes it more impressive.”

Iizuka didn’t have to look far to find something impressive. “At the time I was working on *Sonic 3* with other Japanese



» [Mega Drive] In lieu of early third-party support, Sega would license games from Capcom for conversion to the Mega Drive.

staff at Sega Of America, and in the room next to ours the American staff were working on *Comix Zone*. I thought the idea of having an action game happen within the frame of an American-style comic was fresh and interesting. I played the game a lot when it was in mid-development, but I have never played the final retail version of the game." Kodama's favourite came from Climax Entertainment. "I remember that I was so surprised to see *Landstalker* for the first time," she tells us. "Its pseudo 3D graphics with the quarter view was so unique and the background art and character art was fantastic."

It's fascinating to look back at the design choices that shaped one of the defining consoles of the era. But the truth is that the Mega Drive is so much more than a black box of chips. "Certainly a lot of the nostalgia derives from the software library, but that's not all, Sega crafted such a fun brand image as well! Remember WELCO METOT HENEX TLEVEL? I certainly do," Mark reminisces. "Hard not to smile when you think back to those days." Indeed, three decades on, the Mega Drive still makes us smile – and as non-developers, that doesn't take a 68000 CPU. *

Liberty vs security

Security was one of the most controversial aspects of the Mega Drive – here's how one third party broke through it

One of the interesting things about the Mega Drive is its security system. Mega Drive consoles featuring the Trademark Security System (TMSS) expect to read the word 'Sega' at a specific ROM address, and the word also must be written to a designated RAM address before the VDP can be accessed. If these conditions are met, the system will display a message stating that the game was "Produced by or under license from Sega Enterprises Ltd" Originally, this was intended as a region locking measure – developer manuals referred to it as the "US security code" and early Japanese games were not designed to pass the check. This didn't matter to begin with, as early consoles didn't implement the check.

However, third parties wanted to develop for the Mega Drive without agreeing to the costly official licensing terms. Electronic Arts was one of those, and had reverse-engineered the console – with Trip Hawkins confident that EA would win if Sega tried to sue. "I had great lawyers and took the law very seriously. We understood how to correctly manage a clean room to avoid copyright infringement," he explains. "We waited patiently to confirm that the Genesis that debuted in the US in 1989 and as the Mega Drive in Europe in 1990 did not make any changes to the Japanese version that we had figured out. By comparison, while we also reverse-engineered the NES, we did not release any games based on this work because we could not find a way around the patented NES security chip."

Ultimately, this wasn't a fight that EA had, as its reverse-engineering earned the company a preferential licensing deal. However, Accolade took the unlicensed route when it released *Ishido: The Way Of Stones* and incurred Sega's wrath. "I was not surprised by Accolade's approach but when I went to visit them and compare notes I learned that they lacked legal sophistication," Trip remembers. "I gave them some advice and offered to collaborate but they went their own way." Sega implemented the TMSS check in newly manufactured Mega Drives, and Accolade coded its next releases to pass the check.

Sega launched a series of legal actions in response, alleging unfair competition, copyright infringement for using the TMSS code, and trademark infringement because Accolade's games triggered a message stating that they were licensed by Sega. Accolade filed a counterclaim, alleging that Sega's TMSS screen falsified the source of its games. Judge Barbara A Caulfield initially ruled in favour of Sega, dismissing Accolade's argument of fair use due as its games were made for profit and competed in the marketplace with Sega's games. However, the decision was appealed. Judge Stephen Reinhardt overturned the earlier verdict, noting that non-expressive functional principles are not protected under US copyright law and that the TMSS code was required for a game to function. Any trademark infringement was considered to be inadvertently triggered by this fair use act, and that Sega was at fault for designing a system that would falsely label the product.

Sega was dissatisfied with the outcome and petitioned for a rehearing, but ultimately the two sides settled under undisclosed terms in April 1993, bringing a year and a half of legal wrangling to an end. Accolade became a licensed Mega Drive developer, TMSS remained in Mega Drive systems, and a more specific method of region locking was ultimately implemented.

» [Mega Drive] It was Accolade's *Ishido: The Way Of The Stones* that caught Sega's eye and provoked a legal case.

PRODUCED BY OR
UNDER LICENSE FROM
SEGA ENTERPRISES LTD.

» [Mega Drive] The screen you were greeted with if everything was working correctly.



Mega Drive Control Pad

» **RELEASED:** 1988
» **PLATFORM:** MEGA DRIVE
» **COST:** £14.99 (LAUNCH), £8+ (NOW)

After years of putting up with rectangular slabs of plastic, the Mega Drive control pad was a little slice of joy for console owners. It was arguably the first official pack-in controller to actually take human ergonomics into account, with its rounded plastic body considerably more comfortable to hold than the NES, Master System or PC Engine controllers. The shape also starts to hint at the handles that would become common on later controllers, but doesn't quite commit to the gimmick.

The Mega Drive controller's d-pad was a disc with a raised cross to highlight the four compass directions, which helped players to distinguish directions by feel as compared to the much flatter Master System d-pad. The controller also added a third action button to the customary two, allowing for hassle-free conversions of arcade games which would have used three buttons under the JAMMA standard. Ultimately, despite having more buttons than the competition up to that point, the controller was inadequate for later games requiring a greater number of buttons (such as *Street Fighter II*). As a result, the controller was joined by a six-button counterpart in 1993, which eventually became the default controller for the system. *



Mega Drive Control Pad Fact

■ The earliest Mega Drive controllers in all regions had red lettering in the buttons, which was removed in 1991. Japanese controllers have blue start buttons, and post-1993 European controllers have red start buttons.

ESSENTIAL GAME Gunstar Heroes

Gunstar Heroes is a brilliant game. It's amongst the most action-packed run-and-gun games on the console, with bosses every few minutes and wall-to-wall explosions in between. It also displays a level of technical expertise and inventiveness that ensures it can't be mistaken for anything but a Treasure production. It's the kind of game that every Mega Drive owner should try, if it isn't already in their collection. That it happens to have a control scheme that fits the original Mega Drive pad perfectly, with the three buttons mapped to jump, shoot and weapon select, is a welcome bonus.



The Making Of Savage

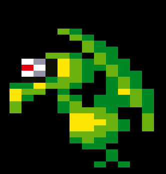
Trantor was a hit on the Spectrum and a revelation on the Amstrad. Nick Bruty tells us how he and David Perry followed up the popular run-and-gun with the high-octane Savage

Words by Rory Milne



IN THE KNOW

» **PUBLISHER:** FIREBIRD SOFTWARE
» **DEVELOPER:** NICK BRUTY AND DAVID PERRY
» **RELEASED:** 1988
» **PLATFORM:** ZX SPECTRUM, AMSTRAD CPC, VARIOUS
» **GENRE:** ACTION



SAVAGE 101

■ Although linked by a common narrative, *Savage*'s three stages are effectively different games. Its first level is a frenetic hack-and-slash with unforgiving platforming, its second is an into-the-screen shooter that riffs on *Space Harrier* and its final stage is a deadly maze that you have to guide a laser-spitting eagle around.

The Amstrad CPC was often poorly served when it came to multiplatform titles, with lazy ports of Spectrum originals being viewed by many publishers at the time as a quick and cost-effective means of supporting the system. *Trantor: The Last Stormtrooper* was an exception, however, in that it received a conversion that played to the Amstrad CPC's strengths and pushed the machine to its limits. While working on this adaptation, *Trantor*'s designer – Nick Bruty – and its coder – David Perry – decided that they should form a partnership, as the designer recollects. "We both liked to work fast, and we liked to do big, bold stuff," Nick begins, "so as we were finishing up *Trantor* we were like, 'Yeah, we should clearly be working together.' Dave worked out of his mother's house. He had a bedroom, and he converted this big closet into his development area. I was living in Brighton at the time, but I used to be up once or twice a week and we would work together there. Every day was a fun day because the speed that we would work at made every day different."

Naturally, the focus of the developers' efforts was a follow-up to the well-received *Trantor*, which Nick remembers being driven by a desire to produce something bigger and better. "I always wanted to see more spectacle," Nick muses, "and *Trantor* was my first step at that. I was like: 'I can blow all the memory on this big, stupid sprite!' So when we were talking about a sequel we decided that we wanted to have more stuff in there. But we weren't going to be able to fit it in because we were going to have another big, epic sprite again, so we were like: 'Well why can't we just have more loads?' It was really just about 'more' – we just wanted to do more."

The opening stage of Nick and David's multiload sequel – *Savage* – took its run-and-gun predecessor as a starting point, but the emerging hack-and-slash soon deviated from *Trantor* by having its enemies guard the game's power-ups. "It wasn't to distinguish *Savage* from *Trantor*," Nick clarifies, "it just felt more like a reward system to keep you engaged. I wouldn't say that it was a heavy design choice. A lot of the choices were just made around what felt good to us at the time. It sort of worked out okay, but some of the game we made a little bit too hard."

Respite from *Savage*'s challenging gameplay came in the form of bosses which could be slipped past rather than fighting them for the weapons in their possession, although as Nick admits this particular mechanic was unintentional. "It was a flaw! We should have spent more time on the bosses and given them some more diverse attacks to deal with that. We made games very quickly, so they often wouldn't get the testing that they should have. We definitely got more time with *Savage*, but because we were making three loads not that much more time."

There was, however, time for the developers to add some unique features to their game's first level, such as vibrant motivational phrases that would flash up on-screen. "It was just adding an extra element of energy," Nick says of *Savage*'s inspirational commentary. "We would have loved to have had a voiceover, but there was just no memory for it, and so we just went for



» [Amstrad CPC] *Savage*'s attempt to escape a castle dungeon starts with a few words of encouragement.

> **"A lot of the choices were just made around what felt good to us at the time. It sort of worked out okay but some of the game we made a bit too hard"**
> Nick Bruty

visuals. It was getting as much motion on the screen as we could get without interfering with the gameplay. And also we did like the fun tone of throwing messages up there as it was speaking to the player a little bit. It was just a high-energy thing, and a bit tongue-in-cheek."

Although equally ostentatious, Nick and David's plans for *Savage*'s second load meant that it would be dramatically different from the game's first stage, with their inspiration being provided by an early classic. "The first section was a running guy because one of my first professional games was *V* – and my first sprite for that was a little running man," Nick reasons, "then *Trantor* had my *big* running man. So after *Savage*'s first level I was like: 'I need to do something different!' Both of us really loved *3D Deathchase* – it just had that little bit of magic to it; the timing, the excitement. We were amazed that no one had really followed that up, and wanted to do our version of that. So we had a crack at it and came up with *Savage*'s middle section, which we called 'The Escape'."

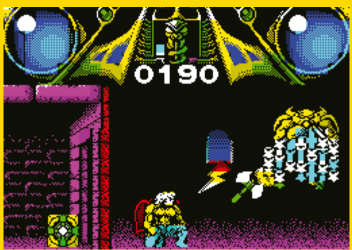
As well as *Deathchase*, *Savage*'s into-the-screen shoot-'em-up second section bore some resemblance to the vivid playfields of Sega's coin-op hit *Space Harrier*, which Nick is quick to acknowledge. "I really liked *Space Harrier* at the time. It was the first time that arcade titles had started to get powerful. I can't think of anything before *Space Harrier* that was *that* graphically intense. So I think we were probably trying to get somewhere a little in between *3D Deathchase* and *Space Harrier* knowing that we had the extra colour and trying to ramp it up."

Key to making *Savage*'s second load stand out from its inspirations were Nick's designs for the stage's nightmarish scaled-sprite monoliths, which the artist viewed as a worthwhile extravagance. "I don't think I started with the intention of making monolithic faces; I just went there out of it being too wasteful to not do something with it. I realised: 'Wow! This is an overly large chunk of the memory for these scalable sprites!' The thing I enjoyed was that I could make them animated; I could have them open their mouths and have their tongues come out. It was also fun knowing we were blowing all of the memory on that one sprite!"

Of course, *Savage*'s third level was a fresh load, and so Nick and David had an empty memory to design into. The pair opted to devise a labyrinth ▶

CONVERSION CAPERS

How Savage compares across various systems



ZX SPECTRUM

■ Thanks to clever colour segregation, the Spectrum version of *Savage* is far more vibrant than many other games for the system. Its collision detection, smooth scrolling and the responsiveness of its controls are equally impressive, all of which you would expect given that *Savage* was designed with the Spectrum in mind.

AMSTRAD CPC

■ As the other platform that *Savage* was created for, the Amstrad understandably boasts a top-notch version of the game. Nick Bruty's visuals are a showcase for what the system is capable of, and in gameplay terms the CPC's *Savage* greatly benefits from the speed and mayhem made possible by David Perry's coding.



COMMODORE 64

■ Although the Commodore 64 version of *Savage* plays almost exactly like the original games, it doesn't quite look the part. 8-bit maestro Steve Crow's stage one and three visuals are well-defined but suffer from a dull colour scheme, and his second level graphics lack detail. However, the C64 *Savage* does sound great.

ATARI ST

■ The 16-bit *Savage* versions are all but identical to look at, with Nick Bruty's adaptations of his original 8-bit visuals representing a real step-up in terms of resolution and colour depth. The Atari ST version of *Savage* feels as intense as the originals, plus it has more bosses in stage one and more varied monoliths in stage two.





AMIGA

■ Like the Atari ST version, the Amiga *Savage* looks fantastic; the only difference being that it has more vivid colours in places. The gameplay in the two conversions is exactly the same. Where the Amiga adaptation stands out is with its superior sound effects and grating music, which thankfully can be turned off, saving your sanity.

PC

■ Even when played in EGA mode, *Savage* on the PC falls far short of its Atari ST and Amiga counterparts in the looks department, and its 'beepy' tunes are not much more than on par with the Spectrum *Savage*'s intro music. As far as the actual game design goes, the PC *Savage* is just as challenging as the rock-hard 8-bit originals.



BRUTY & PERRY

More from the respected double act

TRANTOR: THE LAST STORMTROOPER

■ Before teaming up, Nick Bruty designed *Trantor* for the Spectrum and David Perry adapted it for the Amstrad, although the pair bounced ideas back and forth, and Nick crafted the visuals for both versions. An attractive, frantic run-and-gun, *Trantor* is noteworthy for its flamethrower weapon and its stiff challenge.





DAN DARE 3

■ Nick and David's follow-up to *Savage* was the third 8-bit *Dan Dare* title, although the licence was added after the game had been developed – it was originally called *Crazy Jet Racer*! Their maze-based shooter features an arsenal of over-the-top weapons and teleporters that require you to navigate twisting astral wormholes.

TEENAGE MUTANT HERO TURTLES

■ When asked to produce Amstrad and Spectrum versions of an NES *TMHT* game, Nick and David opted to adapt rather than convert the console title. Their slick adaptation has more confined levels and adds a somersault move that can be used to spin the heroic turtles sideways off platforms.



SMASH TV

■ Given the number of protagonists and the size of the bosses in the *Smash TV* coin-op, the Speccy and CPC versions were always going to be a compromise. Nick Bruty and David Perry's conversions nail the arcade title's frantic, fast-paced blasting and complement it with visuals that play to the 8-bit systems' strengths.

PAPERBOY 2

■ Another pair of Amstrad and Spectrum conversions, but based on a console title rather than a coin-op machine. *Paperboy 2* riffs on its arcade predecessor, with Nick and David's Spectrum port being notable for its colourful levels, and their Amstrad version standing out thanks to its cute sprites and blistering speed.





» [Amstrad CPC] Certain bosses in *Savage*'s dungeon can be rushed past, but you'll be missing out on power-ups.





» [Amstrad CPC] Not long into *Savage*'s first stage a lightning-firing boss confronts the axe-wielding hero.

for *Savage*'s giant eagle to navigate, although the hero himself would be absent from this final stage. "You know what? I should have put *Savage* on the back of the eagle; that would have been better," Nick realises. "At the time, it was because I wanted to animate a different character. And we wanted to get another dimension in the game; we didn't want to do another horizontal perspective. It was the last stage and we thought we would go full-screen movement, and that the eagle should shoot in multiple directions."

A further deviation from *Savage*'s first level followed as the game's developers implemented a screen-wide energy bar that could be fully replenished by magic caldrons placed periodically throughout the game's maze-like level three. "Energy bars were new to us," Nick points out. "It may just have been part of a natural evolution; stage three was an evolution of the ending of stage one. I think in general we were just opening ourselves up to different ideas. It may not have been a conscious choice; it was more just exploring and wanting to advance. Like, what can we do next? We would actually think about that probably more than we would think about pure game design. We developed so quickly that we didn't really spend a lot of time around design papers or planning things out."

This rapid form of development resulted in *Savage*'s stage three labyrinth being populated with deadly obstacles, obstructive one-hit foes and enemies that required multiple strikes to vanquish, which Nick ultimately feels was reasonable given the difficulty of the game's earlier levels. "We were generally looking to fill the screen, and you got more space to do things than you did in the first stage; you could take a time-out," he says. "So it was busy, but I think in the right way. Looking at how the eagle flew around, it had gravity but it did feel very up-down-left-right. If I had a do-over, I would probably put a little more work into the flight mechanic and then give the eagle a little more space to use that, but I think the amount of action was appropriate with the rest of the game."

Following the completion of *Savage*'s third level, the game's designers were left with not one but two finished products, which as Nick explains was as a byproduct of their atypical design process. "It was an interesting thing to do the Spectrum and Amstrad *Savage* [versions] side by side. We did the graphics on the Spectrum first, but Dave always had the engine code running identically. So as fast as I could draw the graphics, there was the Amstrad version right there, which was nice, because if we had waited until the end to do it the Amstrad version would probably have got less time on it. But because Dave had done such a good job of *Trantor* on the Amstrad we wanted to keep that good will that we had built up."

In terms of reviews, this dual system approach to development seemed to pay off with both the Spectrum and Amstrad versions of *Savage* receiving top ratings on their release. The games sold less well, unfortunately, which Nick puts down to misjudged marketing. "The reviews definitely seemed very positive, but sales-wise I don't think it did that well. I hated the marketing campaign – the print ads. They had this weedy little school kid becoming *Savage*, and I think they really just should have focused on the game itself. So there was this big thing: '*Savage*' – a colourful, full-on, *Conan*-on-steroids game, and then we got this weedy, black-and-white advert. Everything about it sucked the life out of me."

But poorly conceived advertising aside, Nick Bruty looks back fondly on his time developing *Savage*, and is rightly proud of his and David Perry's colourful over-the-top epic action game. "I was happy with the whole experience and how it came out. Generally it was a really fun time, I think we were probably just disappointed that we didn't get big sales from it, but I'm still very happy with *Savage*," he concludes. "I like the way it looks; the framerate's pretty good and it's colourful. It was a good progression." ✱



> **"Both of us really loved 3D Deathchase. We were amazed that no one had really followed that up, and wanted to do our version of that"**
> Nick Bruty



DEVELOPER HIGHLIGHTS

TRANTOR: THE LAST STORMTROOPER (PICTURED)
SYSTEM: ZX SPECTRUM, AMSTRAD CPC, VARIOUS
YEAR: 1987

ALADDIN
SYSTEM: MEGA DRIVE
YEAR: 1993

EARTHWORM JIM
SYSTEM: MEGA DRIVE, VARIOUS
YEAR: 1994

COLLECTOR'S GUIDE:

SOFTWA PROJEC



OUR LATEST COLLECTOR'S GUIDE FOCUSES ON SOFTWARE PROJECTS AND ITS LESSER-KNOWN BUDGET LABEL, SOFTWARE SUPERSAVERS. FROM ASTRONUT TO ZIGGURAT AND EVERYTHING IN BETWEEN, WE RUMMAGE AROUND THE 8-BIT PUBLISHER'S BACK CATALOGUE

Words by Richard Burton

In 1984 Software Projects was formed by its three directors; Alan Maton, Tommy Barton and programmer Matthew Smith. Based in Woolton, Liverpool, in the Bear Brand Complex, Software Projects produced games across a multitude of formats. While the ZX Spectrum, Commodore 64 and Amstrad CPC were all well catered for, the company also released games for, among others, the Oric, MSX, Dragon 32, Amiga and Tatung Einstein.

Software Projects' games were always full-price, from £5.95 for ZX Spectrum rising to £8.95 for Amstrad CPC releases, but it became apparent that with the ever-expanding success of budget games that it needed to get a low-cost software arm itself. Soon after, the Software Supersavers label was born with 12 initial releases; eight titles for the Spectrum, two for the C64 and one each for the VIC-20 and Amstrad CPC. Sadly, those 12 games would be the first and last releases.

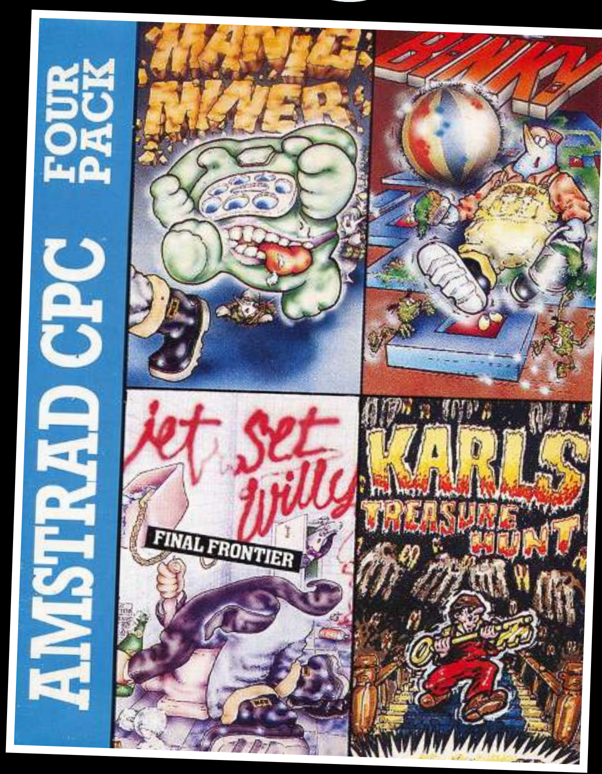
Software Projects frequently licensed out its most popular titles and as such we have included these in the final games checklist overleaf. It includes Tynesoft's disk and cassette releases of *Jet Set Willy* and *Manic Miner* and Revelation's conversion of *Manic Miner* for the Sam Coupe.

So what curios and rarities are to be found in the Software Projects back catalogue? For the painful combination of 'hard to find' and 'eye-wateringly expensive', look no further than the Tatung Einstein games. *JSW* and *Manic Miner* were released individually, while a duo of two game compilations containing *Manic Miner/JSW2*



» [Atari 8-bit] No Software Projects collection is complete without a copy of Matthew Smith's *Jet Set Willy.*

ARE
CTS



and *JSW/Harvey Smith Showjumper* were also released. *Dragon's Lair* was licensed out to Merlin Software and was the fifth and final release.

All are difficult to pick up and, given the limited popularity of the Einstein, you can expect to pay £100 for the individual disk versions and £50 each for the two game compilations and *Dragon's Lair*.

While not in the same collecting echelons of price or rarity, a handful of the cassette releases prove troublesome to find, too. Keep an eye out for *Lode Runner* 128K for the Spectrum, *Galactic Gardener* for the C64, *Space Swarm* and *Space Joust* for the Commodore VIC-20, *JSW* and *Manic Miner* on the Dragon 32 as well as *Manic Miner* for the Oric. While not wallet busting, they will set you back £10 each. The exception to this being *Lode Runner* 128K, which is particularly sought after with a good clean copy likely to cost around £30.

The Commodore 64 version of *BC's Quest For Tires* is quirky in that it has two distinctly ▶



» Dan and part of his pride and joy, his Software Projects collection.

COLLECTOR Q&A

Game collector Dan Evertsson talks about his love of all things Software Projects

How complete is your Software Projects collection of games?
It's very difficult to know exactly, as there are so many rereleases, budget releases and international variants. If we're talking just UK releases, then it's almost complete for both Software Projects and Software Supersavers. There's still a question mark over the Memotech *Jet Set Willy* and *Manic Miner* games but no one seems to know what the definitive story is with those!

What is the most you have spent on a single title?
£125 for a single disk and that was *Jet Set Willy* for the Tatung Einstein. I had searched the internet for all Einstein versions of *Manic Miner* and *Jet Set Willy* and eventually found a private collector of Einstein games in the United Kingdom. Initially he didn't want to sell anything but hinted for the right price he may let *Jet Set Willy* go for £125.

At the time I said to get in touch if he wanted to sell and later he did. I said I would buy only on the condition that he sold me all four of his Einstein Software Projects disks. He agreed and although my wallet screamed no, my heart said yes. £415 later I was glad I did. They're very hard to find today.

What attracted you to collecting Software Projects games specifically?
The inlay artwork! I was completely gobsmacked the first time I saw the inlay for *Manic Miner* and after that I was completely hooked on all things Software Projects. I later found out all Software Projects artwork was created by artist Roger Tissyman and from there on I was a big fan, although sadly I also found that he had died several years ago.

I also collect the Software Supersavers games which was the budget label for Software Projects. The first time I saw the art I didn't think Roger was behind it, they lacked definition and colour but were similar in style. After some research I spoke to Roger's daughter and she confirmed that it was indeed her dad who created them. I guess Software Projects paid less for the budget games artwork, so he spent less time on them! They don't quite have the same charm but I love them anyway.

Is there anything Software Projects related you would love find?
I have one original promotional poster for *BC´s Quest For Tires* but I would love to collect all the other posters to frame and hang on my wall. I just love them.





TOP TEN RARITIES

You'll have your work cut out for you hunting these down



JET SET WILLY AND MANIC MINER

TATUNG EINSTEIN

■ Two hugely familiar games but for an unfamiliar system. Both of the Einstein individually released Miner Willy games are difficult to track down and if you do locate them, don't expect to get much change from £100 each. Finding copies in good clean condition will also prove difficult with most having well-thumbed and rather flimsy instructions/colour code sheet.

JET SET WILLY AND MANIC MINER

MEMOTECH

■ Despite featuring on a Software Projects advert, the Memotech versions of *Manic Miner* and *Jet Set Willy* are still unconfirmed official releases. There are finished versions of each game complete with mocked up inlays but were they officially released, accomplished early fan conversions or samples withdrawn at the last minute? No one seems to have an answer.





MANIC MINER/JET SET WILLY 2 AND JET SET WILLY/HARVEY SMITH SHOWJUMPER

TATUNG EINSTEIN

■ Both of these compilations aren't as rare as the individual examples nor as pretty with bland unimaginative white inlays with no screenshots and garish ineffective design. Still, the ugly ducklings of our checklist will make your wallet £50 lighter. It's also the only way to play *JSW2* on your Einstein.

STAR PAWS

COMMODORE 64 – DISK

■ We've singled out *Star Paws* on this list, however it could just as easily have been *Hysteria*, *Dragon's Lair* or any of the Commodore 64 disk games, for that matter – as these releases are all so very hard to find today. As such, these incredibly rare games command a pretty penny, too, and you would do pretty well to grab any of them for less than, say, £40 each.





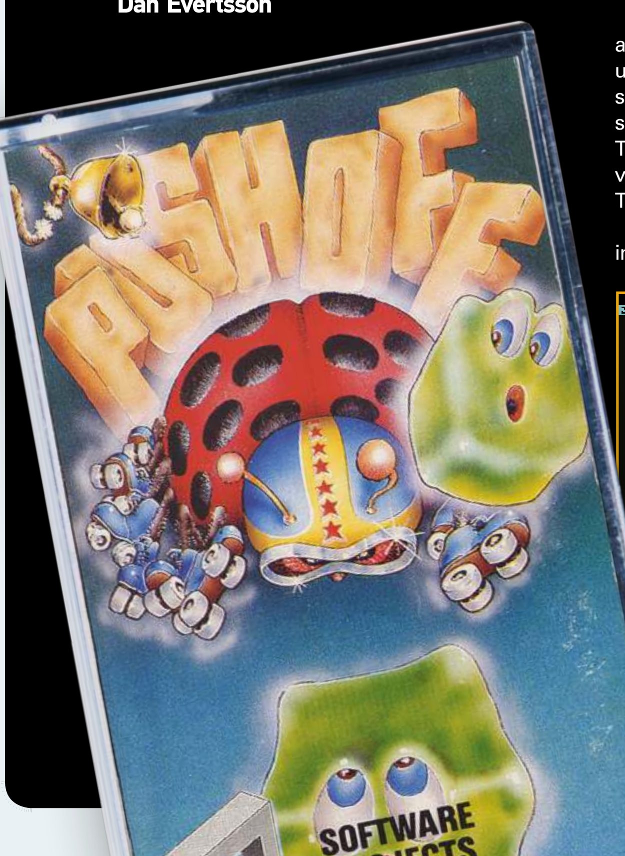
LODE RUNNER 128K

ZX SPECTRUM

■ While the 48K version of *Lode Runner* is in plentiful supply with sealed examples available, the 128K release is a much more elusive beast. Rarely seen, it can be a troublesome game to locate and when it does appear, is usually snapped up very quickly by collectors and nostalgic gamers alike. You can get a 48K *Lode Runner* for just a few pounds, however, the 128K version will be nearer £25.

"I WAS GOBSMACKED THE FIRST TIME I SAW THE INLAY FOR MANIC MINER"

Dan Evertsson

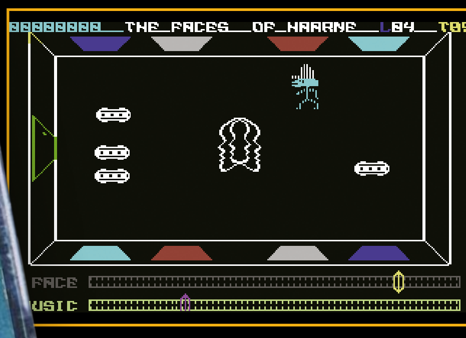


▶ different inlays. One sports the familiar Sierra cover while the other was created by Roger Tissyman, Software Projects' go-to artist. While both are still relatively inexpensive purchases, the Tissyman version is marginally harder to find.

Software Projects only 16-bit releases were *JSW2* and *Manic Miner* for the Amiga. While not rare, they can still command £20 each. Tynesoft's releases of *JSW*, *JSW2* and *Manic Miner* appear all-too sporadically on the BBC Micro with disk versions likely to sting you for £50 each. The Commodore 16/Plus 4 releases aren't any easier to pick-up, compounded further by two different inlay variations of the disk version of *JSW*.

One has the instantly recognisable toilet inlay artwork and comes complete with an additional unmentioned game, *Rig Attack*, on the disk. The second, later release has a thick blue border surrounding the artwork more familiar to other Tynesoft/Software Projects disk releases. This version is easier to find and can be bought for £15. The original disk release is nearer £40.

Completing Tynesoft's Software Projects involvement is the cassette and disk release of



» [C64] *Faces Of Haame* is one of two C64 games that Software Projects released on its Supersavers label.



» [ZX Spectrum] *Fred's Fan Factory* is one of five games that Pat Norris coded for the Spectrum.

Manic Miner for the Atari XE/XL. The disk version will cost you £20 and the cassette £10.

For a real gaming curiosity, cast your eyes over the Commodore 16/Plus 4 inlay error for *Manic Miner*. Software Projects original release of the game saw the text in the yellow flash band on the inlay incorrectly stating it was for the Commodore 64/Plus 4. These were promptly returned to the Bear Brand Complex where they were altered with the '64' inked out and C16 stamped underneath. While crudely eradicated, it created a lovely collectable. A new inlay was produced shortly afterwards with the correct system information. While this replacement inlay version will be a modest £5/£10 to buy, the error inlay could achieve up to £25.

Also worthy of a mention is the Amstrad CPC Amsoft/Software Projects release of *Manic Miner*, complete with new inlay artwork, which should cost around £15 on cassette and £40 on disk. The MSX Bee Card ROM cartridge release of *JSW* by Hudson Soft/Software Projects, complete with a



JET SET WILLY AND JET SET WILLY 2

BBC – BOTH DISK

■ While the cassette releases, licensed to Tynesoft, are freely available and are both relatively inexpensive, the disk versions are most certainly not. They don't surface very often on the open market and cause a bidding frenzy when they pop up on auction sites. *Jet Set Willy* and its sequel should cost you around £50 each to incorporate into your collection.





JET SET WILLY

COMMODORE C16/PLUS 4 – DISK

■ Two disks, one Willy? Nice. The Commodore 16/Plus 4 disk version has two different covers. While the blue bordered edition is relatively easy to find, the full artwork inlay first release will take a lot more detective work to track down. A blue border disk version commands a reasonable £20 price point. The rarer full cover would be double that price. Both are Tynesoft licensed products.

SOFTWARE PROJECTS COMPILATION

AMSTRAD CPC – DISK

■ A nifty compilation appeared on the Amstrad CPC containing all of Software Projects' CPC output; *Jet Set Willy*, *Manic Miner* and *Binky And Karl's Treasure Hunt*. It could be yours for £25, however, a rarer version which includes, bizarrely, the Argus Press game *American Football* rather than *Karl's Treasure Hunt*, will set you back £40 should you be lucky and find one.





GALACTIC GARDENER

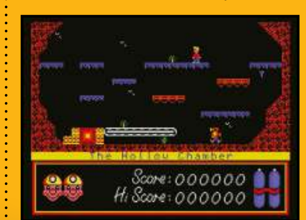
COMMODORE 64

■ *Galactic Gardener* is one of those cassette games that just doesn't pop up very often and is usually the final piece in the Software Projects Commodore 64 collection. £15 or £20 would grab you a minty fresh-looking copy, but actually finding one is another matter entirely. Collecting difficulties aside, however, *Galactic Gardener* is quirky and fun little game that you should at least try if you get the chance.

MANIC MINER

SAM COUPE

■ Another instance of *Manic Miner* being licensed out by Software Projects, this time to Revelation. The original Sam Coupe release of *Manic Miner* is a rarity and there are also inlay and disk variations to track down. There's an earlier SAMCo/Revelation release with a bright inlay and a muted, ill-defined later edition inlay from a different incarnation of Revelation. Either issue will cost a chunky £75.







» There's some great looking items to aim for, providing you have deep enough pockets…

bizarre, yet wonderful, take on the inlay artwork, is a thing of beauty and a must have for the collection. A Bee Card complete with packaging, of which there are European and Japanese variants, will hamper your bank balance by around £100.

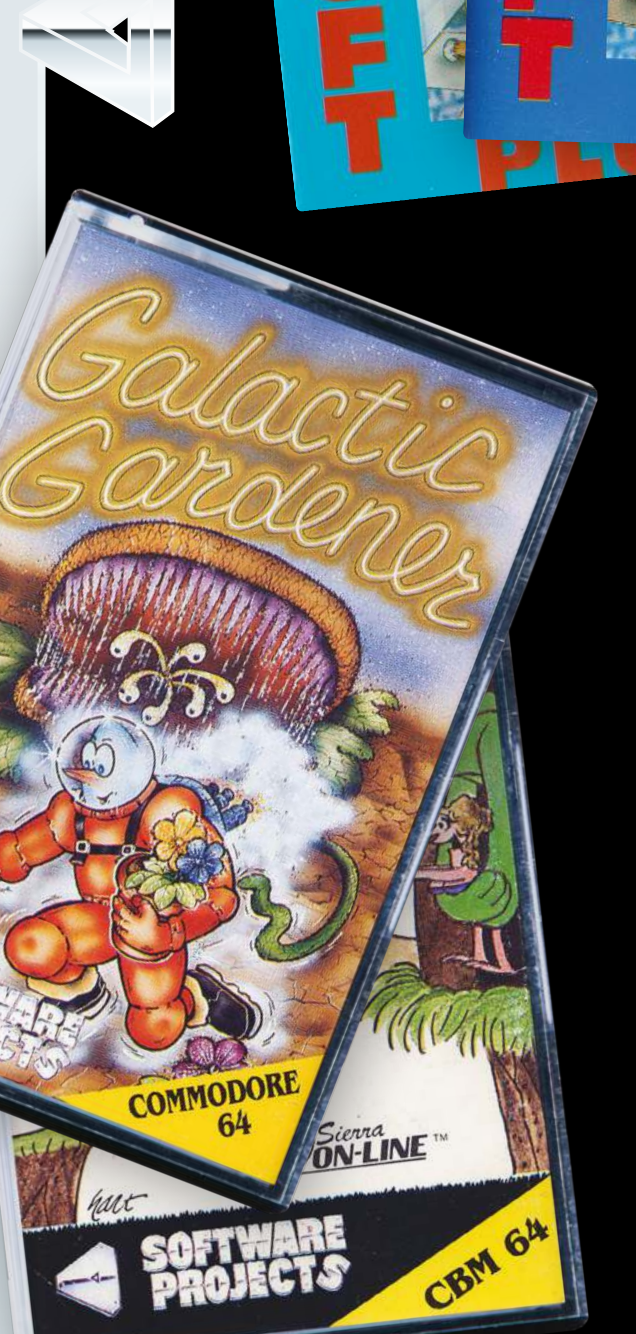
For the completionist there are also two Spectrum versions of *JSW* to locate, although this is an in-game variation rather than a packaging quirk. The early production run of the game used the *If I Were A Rich Man* tune from the classic musical *Fiddler On The Roof* for the in-game music but this was later changed to Edvard Grieg's *In The Hall Of The Mountain King* because Software Projects refused to pay the copyright holders the hefty quote asked for its usage. While this adds no value to either version, it does mean you will have to physically load the game to find the alternate music version.

If you wish to extend your collecting range there are a number of companies that rereleased Software Projects output. Some are legitimate, some bootleg, some were foreign variants but all are interesting. So, whether it's Mastertronic MAD, Alternative Software or Erbe, Jackson Soft or Jester Interactive, there's always more Software Projects-related gaming to be gleaned.

And lest we forget the Software Supersavers budget range. With 12 games to collect across four different formats, it's an attainable and inexpensive collecting objective with all titles costing less than £5 each. ★



» [Amiga] *Jet Set Willy II* was released by Software Projects for the 16-bit Amiga in 1992.



CHECKLIST

A rundown of all of the Software Projects and Software Supersavers titles. Missing any?

AMSTRAD CPC

- Binky
- Dragons Lair
- Dragons Lair (disk)
- Dragons Lair 2: Escape From Singe's Castle
- Dragons Lair 2: Escape From Singe's Castle (disk)
- Jet Set Willy - The Final Frontier
- Manic Miner
- Manic Miner (Amsoft/Software Projects)
- Manic Miner (Amsoft/Software Projects – disk)
- JSW / Binky / Manic Miner / Karl's Treasure Hunt (disk)
- JSW / MM / Everyone's A Wally / American Football (disk)

ZX SPECTRUM

- Astronut
- BC's Quest For Tires
- Dragons Lair
- Dragons Lair 2: Escape From Singe's Castle
- Hysteria
- Jet Set Willy
- Jet Set Willy 2
- Learning With Leeper
- Lode Runner
- Lode Runner 128K
- Manic Miner
- McKensie
- Ometron
- Orion
- Push Off
- Star Paws
- Thrusta
- Tribble Trubble

COMMODORE 64

- BC's Quest For Tires (Sierra inlay)
- BC's Quest For Tires (SP inlay)
- Crazy Balloon
- Dinky Doo
- Dragon's Lair
- Dragon's Lair (5.25-inch disk)
- Dragons Lair 2: Escape From Singe's Castle
- Dragons Lair 2 (5.25-inch disk)
- Galactic Gardener
- Harvey Smith Showjumper
- Hunchback At The Olympics
- Hysteria
- Hysteria (5.25-inch disk)
- Jet Set Willy
- Jet Set Willy 2
- Manic Miner
- Nutcracka
- Star Paws
- Star Paws (5.25-inch disk)
- Thrusta

DRAGON 32

- Manic Miner
- Jet Set Willy

MSX

- Jet Set Willy
- Jet Set Willy 2
- Manic Miner
- Harvey Smith Showjumper

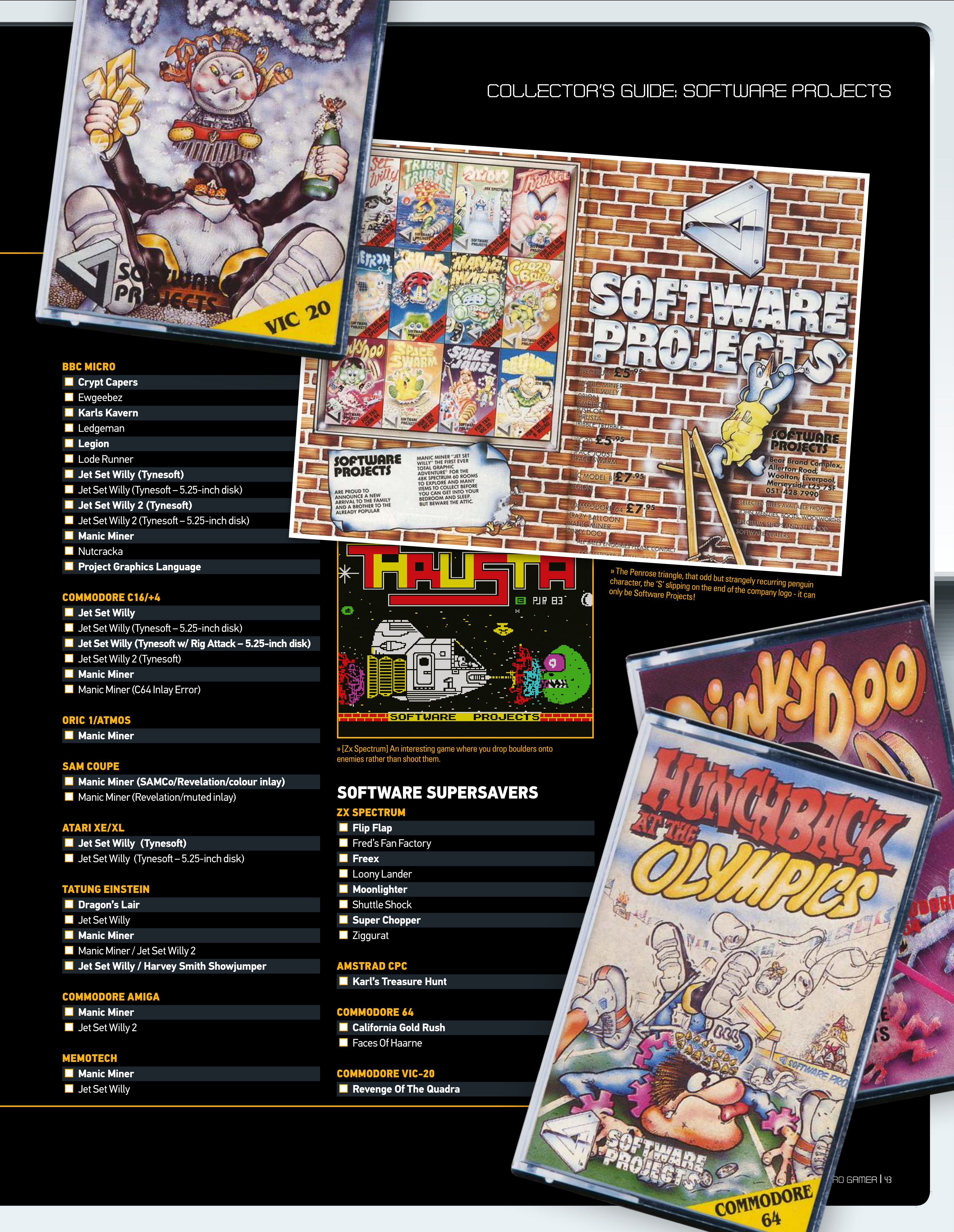
COMMODORE VIC-20

- The Perils Of Willy
- Dodo Lair
- Space Joust
- Space Swarm
- Fatty Henry





» [Tatung Einstein] If you love *Manic Miner* as much as us you're probably already humming along to the theme tune.



» The Penrose triangle, that odd but strangely recurring penguin character, the 'S' slipping on the end of the company logo - it can only be Software Projects!

» [Zx Spectrum] An interesting game where you drop boulders onto enemies rather than shoot them.

BBC MICRO
- **Crypt Capers**
- Ewgeebez
- **Karls Kavern**
- Ledgeman
- **Legion**
- Lode Runner
- **Jet Set Willy (Tynesoft)**
- Jet Set Willy (Tynesoft – 5.25-inch disk)
- **Jet Set Willy 2 (Tynesoft)**
- Jet Set Willy 2 (Tynesoft – 5.25-inch disk)
- **Manic Miner**
- Nutcracka
- **Project Graphics Language**

COMMODORE C16/+4
- **Jet Set Willy**
- Jet Set Willy (Tynesoft – 5.25-inch disk)
- **Jet Set Willy (Tynesoft w/ Rig Attack – 5.25-inch disk)**
- Jet Set Willy 2 (Tynesoft)
- **Manic Miner**
- Manic Miner (C64 Inlay Error)

ORIC 1/ATMOS
- **Manic Miner**

SAM COUPE
- **Manic Miner (SAMCo/Revelation/colour inlay)**
- Manic Miner (Revelation/muted inlay)

ATARI XE/XL
- **Jet Set Willy (Tynesoft)**
- Jet Set Willy (Tynesoft – 5.25-inch disk)

TATUNG EINSTEIN
- **Dragon's Lair**
- Jet Set Willy
- **Manic Miner**
- Manic Miner / Jet Set Willy 2
- **Jet Set Willy / Harvey Smith Showjumper**

COMMODORE AMIGA
- **Manic Miner**
- Jet Set Willy 2

MEMOTECH
- **Manic Miner**
- Jet Set Willy

SOFTWARE SUPERSAVERS

ZX SPECTRUM
- **Flip Flap**
- Fred's Fan Factory
- **Freex**
- Loony Lander
- **Moonlighter**
- Shuttle Shock
- **Super Chopper**
- Ziggurat

AMSTRAD CPC
- **Karl's Treasure Hunt**

COMMODORE 64
- **California Gold Rush**
- Faces Of Haarne

COMMODORE VIC-20
- **Revenge Of The Quadra**



Wilfs:

Items:

Time: BC·1000



» RETROREVIVAL

Kokotoni Wilf

HOW DO YOU SPELL THAT?

» ZX SPECTRUM » 1984 » ELITE SYSTEMS

Nowadays, the games industry is accused of being bereft of new ideas, with big budget developers happy to embrace homogeny if it generates millions of dollars for them. Gamers crow for the good old days where everything was fresh and new, but those same gamers forget that homogeny in the games industry is nothing new, and for every fresh new idea out there that existed on the 8-bit computers, there were just as many games that were happy to ride on the coattails of others. Some were identikit clones that didn't even attempt to hide the fact they were copying arcade classics wholesale, while others, like Elite's *Kokotoni Wilf,* did at least try to bring something new to the table.

A simple glance at the accompanying image here makes it obvious that *Kokotoni Wilf* would not exist without the influence of a certain Matthew Smith. Like Matthew's *Jet Set Willy, Kokotoni Wilf* is a huge sprawling platformer with items to collect, numerous oddities to avoid and an insane number of screens to navigate. It requires pixel-perfect movement, a good memory and features challenging gameplay. It would be easy to write-off Elite's game right there, but Wilf has a few tricks up his sleeve, with the most obvious being his ability to fly.

The freedom of flight ensures that you tackle the screens of *Kokotoni Wilf* in a completely different way to traditional platformers. There are still sections that require pixel-perfect navigation, but it's amazing how much the game opens up by simply giving Wilf wings. And then of course there's the sheer variety that's been crammed into Elite's game. Whereas *Jet Set Willy* took place in a single, gigantic mansion, *Kokotoni Wilf* takes place in unique time zones that can only be accessed by collecting a certain number of amulet pieces, which will then unlock the next zone. It instantly gives the game its own identity and it immediately won the heart of this dinosaur-lover… so I bet you can't guess where the first zone is set. *



Ultimate Guide to WEC Le Mans

A RACING CAR ZOOMING ACROSS THE FINISH LINE AND DISAPPEARING INTO THE SUNSET IS AN IMAGE THAT ILLUSTRATES WEC LE MANS IN MORE WAYS THAN ONE. WE TAKE A LOOK BACK AT KONAMI'S ARCADE RACER AND ITS SHORT-LIVED RACING LEGACY

Words by Martyn Carroll









» [Arcade] The iconic Dunlop Bridge makes an appearance on the first corner.

Being overshadowed by *Out Run* is a fate that befell a number of racing games in the mid-to-late Eighties. Atari's *Road Blasters*, Taito's *Full Throttle* and Namco's *Final Lap* are just three titles that struggled to keep pace with Sega's unstoppable blue-sky racer. Even Sega itself struggled to surpass the mighty *Out Run* for several years.

Probably the cruellest casualty of *Out Run*'s phenomenal popularity was Konami's *Wec Le Mans*. Debuting in late 1986, mere weeks after *Out Run*, *Wec* didn't deserve to be one of the year's 'other' racing games. Like *Out Run* it was technically superb, running on twin 68000-based hardware and featuring an undulating road that dipped and veered just like the real-life course on which it was based (the Circuit De La Sarthe at Le Mans). Like *Out Run* it also benefited from scaled sprites that delivered a tangible sense of speed, it too was available as a fancy sit-in cab that moved to compliment the on-screen action.

Perhaps the reason why *Wec* struggled to steal *Out Run*'s racing crown was because of its simulator tendencies. It was an arcade racer, make no mistake, but as it was based on the famous 24 hour endurance event some degree of realism was expected. Unlike *Out Run*'s ▶

Conversion Capers

How did the coin-op fare on the 8-bit computers of the day?

COMMODORE 64



■ Even the most rabid C64 fan couldn't defend this subpar effort. The wonky track animation effect looks like something you'd see on the Atari 2600, but what really sinks it are the loose controls that make cornering a nightmare. The crash sequence is pretty cool, which is good as you get to see it a *lot*. Jon Dunn's music and sound effects, however, are noteworthy.



ZX SPECTRUM

■ Converting *Wec* to the Spectrum with any degree of accuracy probably seemed like an impossible task, but the team at Sentient Software (building on Mike Lamb's groundwork) defied the odds with this classy conversion. The speed and the rolling road effect are excellent and this is arguably the best checkpoint racing game on the Speccy.

AMSTRAD CPC



■ If you can overlook the four-colour Mode 1 graphics then you'll enjoy this solid conversion for the CPC. The palette may be limited, but the graphics are detailed and the speed of the game is very good. It includes the full flip-over crash sequence, unlike the Spectrum version, but for us it can't quite top the Speccy game. Once again Jon Dunn provides superb sonics.



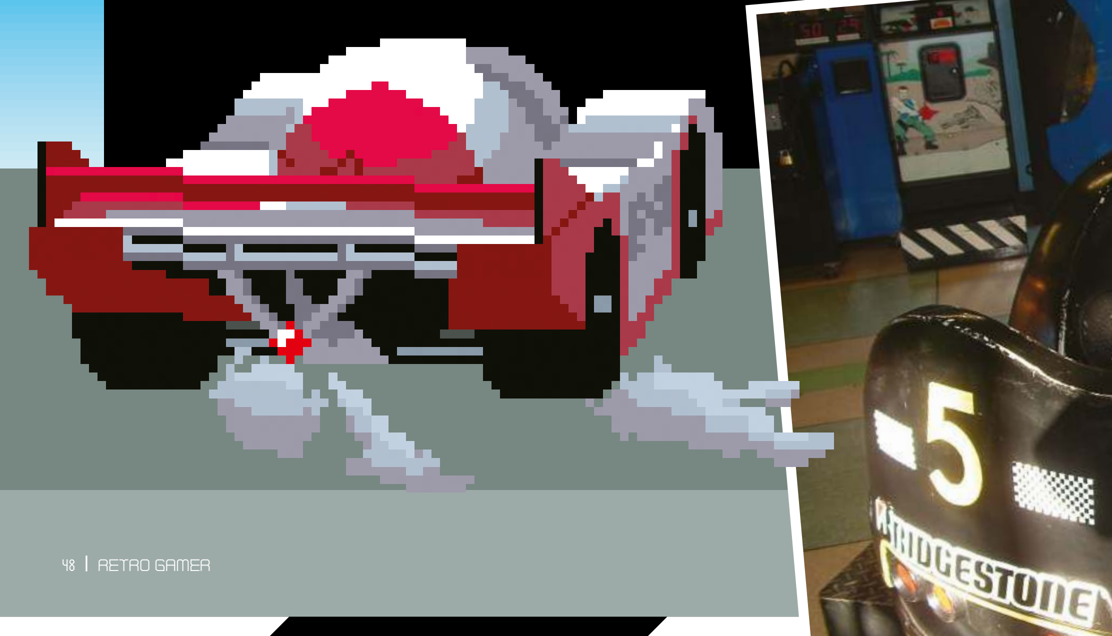
MSX

■ As you can see from the screenshot, this is a straight-up port of the Spectrum version with nothing added. That's not necessarily a bad thing, given the quality of the source, but it does run a bit slower which takes some of the edge off the playability. It's certainly preferable to the two existing *Le Mans* game that were released for the MSX by Electric Software.





» [Arcade] "I can see my house from up here!"



Konami Racing Classics

When it comes to racing games Konami has some good form

KONAMI GT

YEAR: 1985
SYSTEM: ARCADE

■ Konami's first 3D racing game is a precursor to *Wec*. You're not against the clock, but you do have to collect fuel in order to reach the finish line. It's fun to play, but it's basic, especially when you consider that *Wec* was released the following year.



F1 SPIRIT: 3D SPECIAL

YEAR: 1988
SYSTEM: MSX2+

■ This follow-up to the top-down MSX1 game shifts the perspective to behind-the-car 3D. Featuring multiple modes and a simulator angle, this is a racing game with depth. It's also one of the only titles designed for the MSX2+ hardware.



MIDNIGHT RUN

YEAR: 1996
SYSTEM: ARCADE

■ Although billed as the belated sequel to 1984's *Road Fighter*, this is essentially Konami's spin on *Ridge Racer*. The key novelty here is that you encounter regular traffic on the roads. It was ported to PlayStation the following year.



GTI CLUB

YEAR: 1996
SYSTEM: ARCADE

■ Imagine the conclusion to *The Italian Job* as an arcade game and you've got *GTI Club*. The beauty of this riotous racer is that the street circuit contains multiple routes and shortcuts which you can screech into using the handbrake.



KONAMI KRAZY RACERS

YEAR: 2001
SYSTEM: GBA

■ This kart racing game was a tenacious rival for *Mario Kart: Super Circuit*. Featuring characters and locations from Konami's rich history, it's a fun racer that's a perfect fit for the Game Boy Advance.



branching route across the USA, there was just a single track that loosely mimicked the 13.6km Le Mans circuit. It took around two-and-a-half minutes to complete a lap of the circuit and there were four laps in total. Despite the relatively short racing time, the game did simulate the passage of time, with day sliding into dusk by lap two, then night falling by lap three and finally dawn breaking by lap four. During the fourth lap the sky would darken and storm clouds would gather, but this had no bearing on the racing itself.

Whether players would experience this day-to-night cycle was debatable as *Wec* was a challenging game. A very challenging game, in fact. The three-lane track was fairly narrow which made overtaking rivals rather difficult, particularly on corners, and if you so much as clipped another racer or trackside object at speed your car would be catapulted through the air. The crash sequence was, indeed, spectacular but this was cold comfort as the amount of time lost meant that reaching the next checkpoint was suddenly in doubt. On the default 'normal' difficulty setting you could crash once or maybe twice – anymore and you'd struggle to reach the next checkpoint. To compound matters, the amount of traffic you encountered increased on subsequent laps (on the final lap you'd need to pass around 50 rivals), so the chances of reaching the finish line were somewhere south of slim. And as there was no continue option you couldn't buy the chequered flag even if you wanted to.

That said, with practice would come success, and with success came exhilaration as you weaved through the pack, a whisker away from wiping out. In that regard *Wec* was perhaps the first game to accurately simulate the experience of racing on the edge – which is absolutely what any game based on the gruelling Le Mans 24 should do.

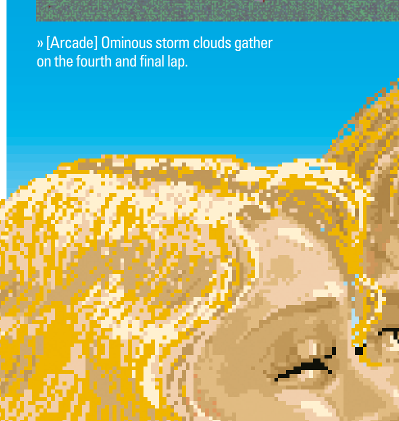
Wec was available in three cabinet types. The headliner was the 'Big Spin' variant which was modelled on the cockpit of the prototype Porsche car you raced in the game. The cab would judder up and down, lurch left and right, and even spin 180 degrees when you crashed out. It was an impressive machine but getting all shook up while playing could be quite disorientating at times. It was also expensive, costing an incredible £7,000 per unit. Also available was the smaller 'Mini Spin' model which was less expensive and more restrained, and finally the basic upright type which was obviously static but featured a vibrating steering wheel. All three variants displayed the game on a standard 20-inch monitor.

Wec made its European debut at the Preview ▶

> **"Mike [Lamb] had the rolling road up and running and nothing else when we were brought in"**
> John Mullins



» [Arcade] Ominous storm clouds gather on the fourth and final lap.



Developer Q&A

John Mullins was handed the challenge of converting Wec to the Spectrum and MSX



Tell us about the *Wec Le Mans* conversion. Didn't you come on board part-way through?

That's right. *Wec* was a bit odd. Mike Lamb was originally working on it in-house and he was dragged off it to work on one of Ocean's big licenses – *Robocop,* I think. My company Sentient Software was asked to finish up the work on the Spectrum and MSX versions, while John O'Brien worked on the Amstrad version.

How much work had Mike Lamb done and was it a smooth transition?

Mike had the basis of the rolling road up and running and nothing else when we were brought in. Technically that was the hardest part and I guess amounted to 25 to 30 per cent of the work. The transition was as smooth as it could be, as we'd had no involvement at all until we were asked to take over. We probably had an hour or so chat with Mike where he demoed the work he'd already done. He then passed over his source code and we just got on with it. Mike's code was clear and really easy to follow, so it only took me a day or so to fully understand what was going on and I don't recall having to go back to him with any questions. We compared notes with John O'Brien a couple of times but other than that everything was fairly straightforward.

Were you provided with the coin-op to refer to?

We did have access to an arcade machine. I guess I must have spent a few hours playing it. We also had some videos of a complete playthrough of the game.

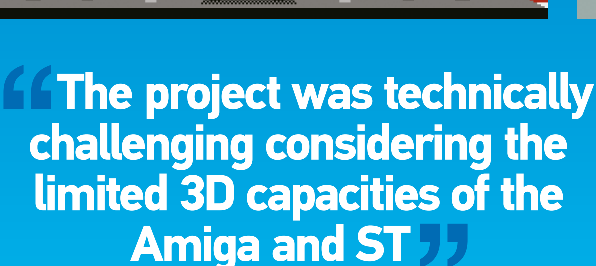
What's the story behind Sentient Software?

Sentient was formed sometime in early 1985 by myself and three friends. We had been doing some ad-hoc work for Memotech and its MTX computer and decided we should see how far we could go. We were working for food at the start but within a few months we picked up some contracts. For the next few years we worked on a number of titles for publishers like Ocean, US Gold, Virgin and others. As is often the case, we started to expand the business and typically overstretched ourselves, and that ultimately led to the company folding in late 1989. Throughout the five years we worked ridiculously long hours for fairly meagre rewards, but most of the time had a blast doing it.



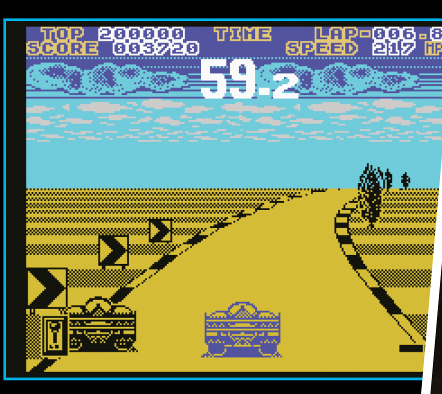


» [Amstrad CPC] Ocean's *Burnin' Rubber* (below) was uncannily similar to the Amstrac CPC version of *Wec Le Mans* (above). They were even by the same programmer, John O'Brien.



"The project was technically challenging considering the limited 3D capacities of the Amiga and ST"

Christophe Gomez



» [MSX] The MSX version of *Wec Le Mans* is based on the Spectrum conversion.



» Like most of Ocean's arcade conversions, *Wec* was published on its Imagine label.



» [Arcade] In a neat touch, crashing often takes other cars out of the race, too.

1987 arcade show in London, where it lined up alongside Sega's *Out Run* and *Enduro Racer*. Despite the strong competition, Clare Edgeley from *C&VG* magazine chose *Wec* as her favourite. "Without a doubt Konami came out the winner with its superb game," she wrote, having test drove the Big Spin model. "I've *never* been in anything like it! The movement of the car really lifts it above the rest." The Newsfield team also loved it. "It's an exhilarating experience – part driving game, part fairground ride," wrote Gary Penn.

Konami already had a successful relationship with Ocean Software so it was no surprise when the Manchester firm announced that it would be publishing the home computer versions on its Imagine label. Both 8-bit and 16-bit conversions were planned but in the end it was only released for the Commodore 64, Spectrum, Amstrad CPC and MSX in early 1989. The versions proved to be a mixed bag. In a preview for the C64 version *Zzap!64* asked, "Are we about to witness the best racing game conversion ever?", and the 40% review that would follow answered that unequivocally. The Z80 versions fared much better, with *C&VG* awarding the Amstrad CPC and ZX Spectrum versions 82% and 83% respectively. *Sinclair User* was more generous, awarding the Spectrum version 91% and calling it "absolutely brilliant". The CPC later received an unofficial version of the game as the Plus range launch title *Burnin' Rubber* was clearly based on *Wec* and even featured the day-to-night cycle that the official conversion lacked.

The game's winning run was ultimately a short one, as it wasn't released for any consoles and has never been included on a retro collection (possibly due to licensing issues). Konami did reuse the *Wec* hardware for the little-known 1988 coin-op *Hot Chase*, but it wasn't until 1994 that it produced the closest thing to a *Wec* follow-up. *Racin' Force* was essentially an unlicensed update of *Wec*, with strong simulator leanings and night driving. Expanding on the original, there were now four different courses to choose from and machines could be linked to support up to eight players. If you can't recall *Racin' Force* then it's probably because you were too busy playing *Daytona USA*. For Konami, it was a case of Sega strikes again.

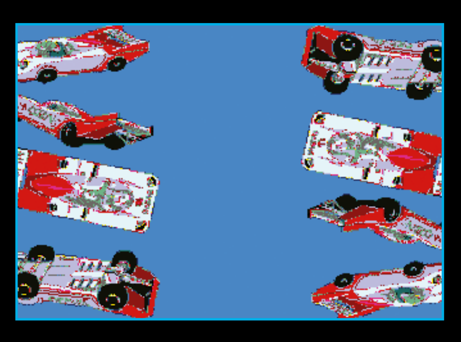
A small coda to the *Wec* story is another obscure coin-op from 1995 titled *Speed King* (also known as *Road Rage*). This futuristic racing game was set in the same world as cult adventure game *Snatcher* – yet Konami's Tanaka Fumiaki claims that the game's fully-moving cockpit was directly inspired by *Wec Le Mans* and its Big Spin thrills.

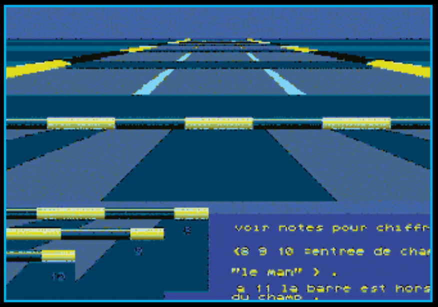
Whatever Happened To… The 16-bit Conversions?

Amiga and Atari ST versions of *Wec* were advertised but never released. The conversion was in development at Ocean France which had previously handled the 16-bit versions of *Operation Wolf*. "*Wec Le Mans* was a very challenging project," reveals former Ocean France programmer Christophe Gomez. "We only spent a month or two assessing the project. For this one we received the arcade machine but no assets or source code. The project was technically challenging considering the limited 3D capacities of both the Amiga and the ST, and the high quality expectations. But we were ready to tackle it."

So what went wrong? "It was a long time ago but I believe that there were some issues with the rights and they were not completely secured by Ocean. So our team was assigned to another project, *Ivanhoe*. I guess that when the rights were secured our studio was fully booked. I also believe that because of the complexity of the conversion the development costs were deemed too high."

Ocean's Gary Bracey confirmed in 1991 that the 16-bit versions had been canned. It appears that no actual coding work was done, but artist Philippe Dessoly did start ripping graphics from the arcade board. These graphics surfaced online in 2007 and they're all that remains of the conversion.





» [Amiga] Some of the Amiga graphics discovered on Philippe Dessoly's development disks.



DIGITAL FANTASIA

Brian Howarth is in Blackpool, writing text adventures for the TRS-80. New 8-bit computers are arriving. What should he do? >CREATE COMPANY. Brian creates a company called Digital Fantasia. What now? >INTERVIEW BRIAN

Words by David Crookes

In the shadow of the almost Soviet-style Norbreck Castle Hotel, a pebble's throw from the Blackpool seafront and its trundling trams, there was once a small but flourishing mecca of computing run by a programmer well-known to anyone with a love of text adventures. It sold a range of software titles, books and other goodies. But the items Brian Howarth enjoyed selling the most was a series of games called the *Mysterious Adventures* – not least because he had written them himself, to critical acclaim.

It was 1983 and Brian had become enamoured with computers. Having left grammar school in Blackpool in 1969 with a handful of O-levels he begun a career as a telephone engineer, he ended up buying a TRS-80 from Radio Shack in 1981 before a friend introduced him to games written by Scott Adams, the first person known to create text adventures for personal computers.

"I enjoyed playing those games and I became motivated to come up with something myself," Brian says, explaining how he liked the 'split screen' format, where the descriptions would be displayed in the top portion of the screen, and the player and computer responses would take up the lower half.

"Prior to me first encountering a Scott Adams adventure, I had only really experienced Microsoft's *Colossal Caves* adventure, and *Adventure* on the Atari 2600. I enjoyed the genre enormously but seeing a Scott Adams adventure running on a TRS-80 convinced me that it would be a do-able thing on a microcomputer that I had a passion for." It was at that point he tried his hand at producing his own games using BASIC, starting with a title called *The Golden Baton*.

It was a relatively small adventure, with an equally minuscule inventory, tasking players with regaining an important artefact. The puzzles were also sufficiently difficult, leaving gamers a little stumped at times. But, having struggled to do a decent job in BASIC, Brian decided to start over. "There was an issue of what I felt would fit into the available RAM, which, on the base TRS-80, was a mere 12 kilobytes," he explains. "My attempts in BASIC were quickly consuming RAM and so I chose to bite the bullet and learn assembly language. The resultant size of the machine code convinced me that it would be the only way."

To learn assembly, Brian bought a book and stayed up into the small hours on many a night in a bid to learn it. Once completed, he looked around for a publisher and found, to his delight, that a programmer called AJ Harding who ran the software company, Molimerx, liked it. He wanted Brian to create a series of games called the *Mysterious Adventures* ("The name wasn't an earth-shattering inspirational event – just two words depicting my hopes for the series," Brian says). Brian left his job and soon got on with producing *The Time Machine* and *Arrow Of Death*.

That purchase of a TRS-80 suddenly felt like a life-changing move. "I was pretty obsessed with all aspects of having a microcomputer," he says. "Before getting the TRS-80, I'd had no programming training hence all the tools that I acquired, that were needed for coding on that system, seemed just what they needed to be. I spent many hours collecting and playing software and tinkering with utilities. It seemed like heaven."

» Brian wanted to make adventures for 8-bit systems, such as the BBC Micro, so he established his own company in order to do just that.



» [ZX Spectrum] Initially Brian tried to create *The Golden Baton* in BASIC before turning to assembly to free up RAM.



Working with Molimerx was also good for him. "It helped me nurture the self-discipline to not procrastinate too much when somebody was pressuring me to get titles completed on a deadline," Brian explains. But once the first three *Mysterious Adventures* had been developed, his work spun into a new direction. Although he was also producing prescription-labelling software at the time for a local chemist, he answered a notice placed in a computer magazine by Mike Woodroffe of Adventuresoft for a coder who could port Scott Adams' games to UK computers such as the Spectrum, BBC Micro and Oric and he jumped at the chance.

This altered the way he developed his games. "An acquaintance questioned why I was laboriously producing each title as a single chunk of code and data, instead of having an interpreter into which I could 'plug in' the data part of the adventure," Brian explains. "He told me of an editing system he had gotten hold of and he sent me the user instructions for it. To this day, I have no evidence that these instructions were those that Scott Adams created or used, but it served to illustrate to me that I could make life easier for myself if I could reconfigure my codebase so that it would accommodate a database. It took a lot of work, but I managed to conform my code to use a database which was essentially the adventure text (the locations, descriptions, responses, messages and so on) along with the response algorithms."

Brian was on a roll, but then, in 1983, he made a sudden decision to go it alone. Molimerx was not interested in marketing the *Mysterious Adventures* for any machines other than the TRS-80 and the IBM PC. "So I – seeing the approach of an army of new 8-bit computers such as the BBC Micro, the Sinclair Spectrum, the Atari 800/400, the Oric Atmos and more – decided that my newly-adopted interpreter/database method of creating titles was just the ticket for broadening the market potential. I formed Digital Fantasia for that purpose."

Setting up a company was a bold move that would see him publishing his own games for the very first time. The shop in Blackpool formed part of the plan. "My sister-in-law was the main staff member in attendance but, in the spirit of being a family business, various family members did shifts attending to customers," he says. Brian's job was to port his games and produce new ones. ▶

» [BBC Micro] The games were instantly familiar, with location descriptions taking up the top part of the screen and the input section at the bottom.

TIMELINE

1981

- Brian Howarth buys a TRS-80 computer from Radio Shack.
- ***The Golden Baton* is written, first in BASIC and then in newly learned machine code.**
- *The Golden Baton* is published by software house Molimerx.
- ***The Time Machine* and *Arrow Of Death Part 1* are written.**
- Molimerx suggests creating the *Mysterious Adventures* series.

1982

- **Brian adopts a code/database structure of the type used by adventure game programmer Scott Adams.**
- *Arrow of Death Part 2* becomes the *Mysterious Adventures* adventure number four.
- ***Escape From Pulsar 7* is written in collaboration with Wherner Barnes.**
- Brian works on *Circus*, which he said was reminiscent of the novel *Something Wicked This Way Comes* by Ray Bradbury.
- **Digital Fantasia is formed to port games from TRS-80 to the BBC Micro.**

1983

- Digital Fantasia operates a shop in Blackpool and a mail order service.
- **Games included *The Feasibility Experiment*, *The Wizard Of Akyrz* and *Perseus* and *Andromeda*.**
- Brian's game engine is expanded to allow complete sentences.
- **Digital Fantasia produces the final two games in the *Mysterious Adventure* game series.**
- The company strikes a deal with Channel 8 Software and files for bankruptcy shortly after.

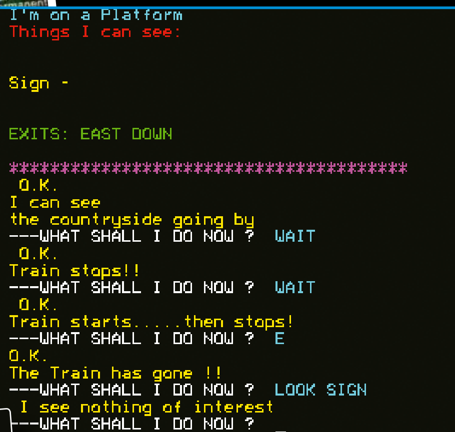




» An advert for Digital Fantasia which makes clear it was selling the BBC and 48K Spectrum versions, with Channel 8 publishing those on the C64, Dragon 32 and Atari 400/800.

"I had already written the Interpreter Engine in 6502 code for the Atari 800/400, so it was a natural growth into what was a very nice BBC Micro engine which was also 6502," he continues. "It seemed to me that that market might yield good sales figures for the growing number of titles in the *Mysterious Adventures* series." He was able to focus on porting a host of games including *Arrow Of Death Part Two* which he wrote in 1982 using his new database driven program, and *Escape From Pulsar 7* which he produced with an author called Wherner Barnes, "a dude who was around the same age as me who I knew from a group of my drinking buddies that went fell-walking in the Lake District and the Yorkshire Dales".

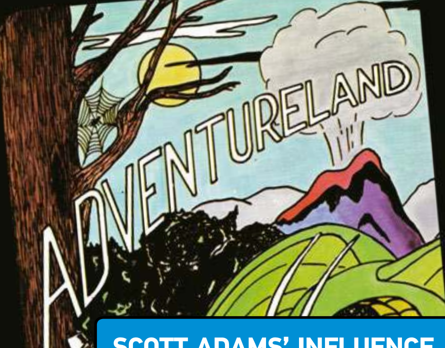
Escape From Pulsar 7 was set in space and it involved an escaped creature eating the crew of the spaceship and forcing you to make an escape. But if that sounded rather clichéd, another game, *Circus*, had a more creative plot involving the player's car running out of petrol close by a deserted circus jam-packed with dark secrets. As always, the game involved picking up and using of items, together with the need for lots of mapping, but Brian says *Circus* was his favourite.



Working with friends helped to keep the stories fresh, he adds. "When I was making the games, I had some help from a couple of buddies who came up with storylines for several of the series – their only brief was to conjure up adventures that didn't cover ground that had already been covered. They did a good job and I was proud to include their stories as titles in the series. As for me, I just worked on developing interesting varied settings, and endeavoured to incorporate challenging and rewarding puzzles and solutions."

He teamed up with Wherner Barnes again for *The Feasibility Experiment* which became the *Mysterious Adventure* number seven. It had more than 50 rooms spread across different environments and time periods. The plot involved recovering treasures as an 'Ultimate Warrior' and it was dubbed by *Edge* magazine (perhaps infamously given it's quoted across the internet), "as a glorious stream-of-consciousness ramble" in December 2003.

He then worked with Cliff J Ogden on *The Wizard Of Akyrz* which was set in a royal palace. "Cliff was an older guy who was a member of a TRS-80 user group that I had joined," Brian says. "Despite him being a bit of an old crotchety piratey sort of character, I grew to get on quite well with him since he lived close by." Brian also got to work on expanding the usual two-word parser used by Scott Adams by allowing complete sentences. This was a result of Brian expanding the game engine and it was used in *Perseus & Andromeda* (number nine in the series). It was a retreading of the Perseus mythology story and, as well as saving Andromeda from the sea monster Ceto, it needed players to arm themselves with a sword and a shield – plus, a pair of sandals of course.



SCOTT ADAMS' INFLUENCE

■ As one of the most influential adventure game creators, Scott Adams inspired a great many developers and Brian Howarth was no exception. Having being introduced to Scott's games, Brian went on to develop a near-identical engine that allowed him to quickly and easily write his own similar titles.

DNA OF DIGITAL FANTASIA



TRS-80

■ The TRS-80 was Brian's first computer and the one on which he produced his first adventures. Even though Digital Fantasia did not publish those games (Britain wrote them for Molimerx to sort), the machine remains a key part of the company's DNA since it was on that computer he learned the tricks of the trade.



BBC MICRO

■ Brian Howarth noted the introduction of the BBC Micro with much interest. As one of the many new 8-bits appearing at that time, he saw the potential for his adventures on it. When publisher Molimerx ruled out porting to anything other than DOS, Brian set up Digital Fantasia to target the new market.

“We got into heavy debt caused by optimistically winning large orders for units”
Brian Howarth

Around the middle of 1983, Digital Fantasia ran into a little bit of bother when Brian read a snippet in *Home Computing Weekly* about a new software subsidiary being set up by Computerhouse. It was to be called Fantasia, which Brian remarked in a subsequent issue was “pretty similar”, and he was worried it could affect his business.

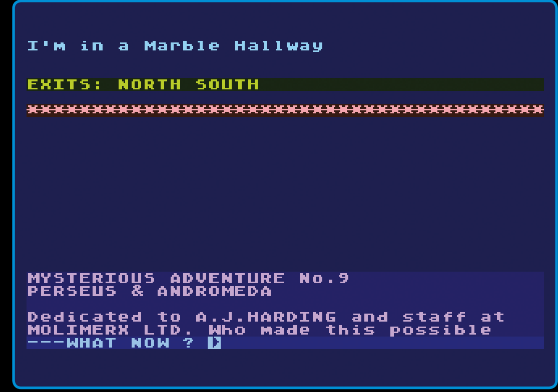
At that time (June 1983), he was planning to release the whole *Mysterious Adventures* series for the 48K Spectrum, having already ported it to the BBC Micro. He was looking forward to taking advantage of the extra memory which is why games on the Spectrum incorporated scene-setting graphics. “Graphics were becoming desirable and the TRS-80 could not really have supported them,” he says.

Two more adventures were then released – number 10, based on *And There Were None*, and *Waxworks* (number 11), written with Cliff J Ogden (a wacky story that involved looking for clues into order to find and identify waxwork statues of famous people). Released on a host of computers including the C64, Commodore Plus/4. ZX Spectrum, Acorn Electron, BBC Micro, Dragon 32/64 and Oric-1/Atmos, the versions either had descriptive prose or relied on graphical representations. Those that had visuals were shifting in greater numbers, however, and trouble was just around the corner.

“Thanks to my lack of experience in budget management, we got into heavy debt caused by optimistically winning large orders for units, spending way too much on packaging printing, producing, followed by not being paid by wholesalers,” Brian says. “The company had no choice but to declare bankruptcy.”

Just prior to that, Brian had struck a deal with Channel 8 Software to publish the C64, Dragon 32 and Atari 400/800 versions of his games but the closure of Digital Fantasia effectively marked the end of a fun yet short independent journey for Brian, who went back to work for Adventure Soft and created games based on *Gremlins*, Robin of Sherwood and *Super Gran* (“these household names probably contributed to bringing interactive fiction to a wider audience,” Brian says).

But then Digital Fantasia had served its purpose in allowing Brian to port games from the TRS-80 and put his adventures in front of a wider audience and so he has no regrets. His games continued to sell thanks to Channel 8 and his reputation had been secured. He is also pleased that the *Mysterious Adventures* are still remembered today. “They were good days of technology advances,” he says. “I also enjoyed writing the software.” *



» [Atari 8-bit] The company's games were also ported to the Atari 8-bit computers and given a colourful split-screen background.

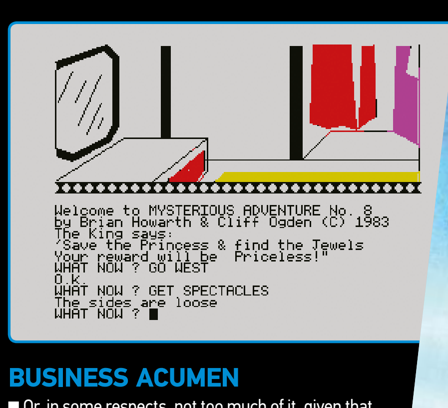


WHERE IS HE NOW?

■ Brian emigrated to the USA in 1990 where he was employed by Cinemaware for a year. He then remained Stateside and worked for Acme Interactive on *David Robinson's Supreme Court* for the Sega Mega Drive in 1992. He is also credited as a software engineer on *Thunder In Paradise Interactive* for the CD-i in 1995. He has also been writing software for tablets and the iPhone and his titles include Pottery Wheel, New Glass Harp and WriteLines.

BRIEF DESCRIPTIONS

■ Although the scene-setting text at the beginning of the adventures was lengthy, the descriptions of the various locations within the games themselves were brief and to the point. Brian felt elaborating would add little and that it would only make the titles overly verbose. Besides, the versions with graphics were selling better.



BUSINESS ACUMEN

■ Or, in some respects, not too much of it, given that the company folded rather quickly. The games did live on, however, thanks to a royalties-based publishing deal with Channel 8 Software, based in nearby Preston. Digital Fantasia, which was located in Blackpool, closed soon after the deal was struck.



THE UNCONVERTED

Arcade games that never made it home

QUIZ & DRAGONS: CAPCOM QUIZ GAME

DEVELOPER: **CAPCOM** YEAR: **1992** GENRE: **QUIZ**

■ **It's easy to see why quiz machines have become so popular over the years.** After all, who wouldn't want a chance to turn all that useless knowledge rattling around their head into some quick and easy cash? Capcom's own take on the popular genre doesn't reward you with cash, but it does manage to meld the traditional quiz structure to a *Dungeons & Dragons*-styled board game and the end result is strangely satisfying.

Set in the far off land of Capconia the paper-thin plot requires you to retrieve the seed from the tree of knowledge, which has been stolen by the despotic Gordian. There are four distinct heroes to choose from and each has their own useful abilities that should hopefully make your journey a little less treacherous.

The fighter (who looks similar to *Golden Axe*'s Ax Battler) recovers vitality far quicker than the other three heroes, while the ninja has the ability to sometimes deal double damage. The wizard uses his knowledge to occasionally let the player choose a specific category of spells to answer, while the Amazon's ability to drop one or two of the answers is arguably the most useful.

Each level takes place on a board game-like layout and a die is rolled to determine how far you can travel during a turn. Some squares contain an Inn where you can rest, or an elf that will give you a useful gift when defeated, but most squares contain dangerous monsters, including ferocious dragons. Battling enemies couldn't be simpler. You're asked a question and are given four possible answers, answer correctly and you'll deal damage; fluff the answer and you'll lose vitality. Once you've dealt enough damage you'll enter a new turn and face another potential enemy, or receive a useful item to help you on your way. While there is a decent range of categories on offer and the static visuals are quite nice in places, it's easy to see why Capcom's game was never ported to home systems at the time of its release.



■ Two-player mode is highly recommended because you take on your opponent together, which heightens your chances of winning. Just remember that whoever answers correctly nets all the available points.

■ This is the amount of time you have to answer each question. Your available points are linked directly to this dwindling bar so be sure to answers questions as quickly as possible.



■ Defeat the elf in combat and you'll receive a useful item that will be activated during your next battle. They range from rubbish medicine that restores a single health bar to the super cheaty Ring Of Knowledge that handily flashes the correct answer for you.

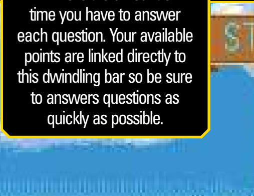
■ Dragons are immensely powerful and act as bosses on the earlier stages. Unlike other enemies they are impossible to bypass so you'll always land on their square, no matter what you may have rolled at the start of the turn.

CONVERTED ALTERNATIVE

A QUESTION OF SPORT

1988

■ Virtually all the arcade quiz games that we know of largely received home conversions in Japan only, which make them rather pointless to recommend if you can't speak the language. So instead we're going with this adaptation of the popular BBC quiz game, which has very little in common with the arcade original.



1944: THE LOOPMASTER

DEVELOPER: **8ING/RAIZING** YEAR: **2000** GENRE: **SHOOT-'EM-UP**

■ Unlike every other game in the series, 1944 was developed by shoot-'em-up specialists, 8ing/Raizing. It remains very similar to earlier games in the franchise, but feels a little more bombastic, thanks to some excellent bosses and a selection of ridiculous over-the-top explosions.

It's largely business as usual, though, which means choosing a World War 2 plane and shooting down as many enemies as possible, which remains as satisfying in *The Loop Master* as it was in the original *1942*. There's a handy charge button, which enables you to become invincible for a short amount of time and it's also possible to attract wingmen that will increase your overall firepower, but are more susceptible to being shot. You've also access to a bog-standard bomb button, which fills the screen with multiple Tomahawk Missiles, while your craft features a health bar that decreases with every hit you take.

The biggest change to the series though is the move to a horizontal screen layout (the game still scrolls vertically), which not only gives you more room for manoeuvring, but also allows 8ing/Raizing to show off some truly spectacular looking bosses. It remains the last arcade game in the series, as *1942: Joint Strike* was released on Xbox 360 and PS3.



» [Arcade] There's a range of bosses to dispatch in *1944*. They'll trundle off screen if you're too slow.

CONVERTED ALTERNATIVE

1942

1984

■ Shoot-'em-ups were a lot more popular in the Eighties and as a result would turn up on countless home systems. *1942* was no exception and it appeared on numerous home systems, including the Amstrad, C64, MSX and Game Boy. The original arcade version recently appeared on the Wii's Virtual Console.



CONVERTED ALTERNATIVE

DUNGEONS & DRAGONS: SHADOW OVER MYSTARA

1996

■ Although it never released *Battle Circuit* on home systems, Capcom did convert its excellent adaptation of *D&D*, along with its 1993 predecessor, *Tower Of Doom* to Sega's Saturn. While it's a good conversion, it's let down by so lengthy loading times.



BATTLE CIRCUIT

DEVELOPER: **CAPCOM** YEAR: **1997** GENRE: **SCROLLING FIGHTER**

■ Considering just how prolific Capcom's output was on the Saturn and PlayStation it's strange that the excellent *Battle Circuit* never received a home release.

The game itself is not only Capcom's last arcade scrolling fighter, but one of the most bizarre games it has ever churned out. Catering for up to four players, the five available bounty hunters are incredibly strange and include a pink sentient ostrich, an odd-looking alien that looks like a bipedal Venus flytrap and a cat-like humanoid, called Yellow Iris, who sometimes works as a part-time fashion model.

Each character plays differently to the next and have their own special moves that can be upgraded. While the levels aren't quite as memorable as the characters that battle in them, they're occasionally spruced up with some entertaining bonus rounds and the ridiculous bosses that wait at the end of each stage.

Filled with some stunning animation and surprisingly deep combat mechanics, it's a pity that Capcom's beat-'em-up never made it to home systems, because it still holds up exceptionally well. It's never turned up on any later compilations, either, making it a true unconverted gem.

» [Arcade] How many arcade games can you think of that pitch a sentient ostrich against an Elvis impersonator?

BEST LEFT IN THE ARCADE

AVENGERS

DEVELOPER: **CAPCOM** YEAR: **1987** GENRE: **SCROLLING FIGHTER**

■ This bizarre curio has nothing to do with Marvel's superhero licence and is instead a forgettable scrolling brawler that mashes together the top-down viewpoint of *Commando* with the combat mechanics of *Kung Fu Master*.

Several girls have been kidnapped and stowed away in some of the worst parts of the city and your job is to punch and kick at anyone that gets in your way so you can save them. As with *Kung Fu Master*, enemies typically attack en masse and like to give you an energy-draining hug upon contact. A well-timed kick will send them on their way, but that wont earn anywhere near as many points as the more difficult to pull off punches.

You can earn power-ups by smashing open dustbins and crates, but the repetitive combat and ropey collision detection will quickly stop you from pumping any additional coins into the game. It's pretty easy to see why nobody bothered converting it to home systems on its original release.



Rock N' Roll Racing™

Perhaps one of the most iconic 16-bit racers, Rock N' Roll Racing was one of the key games that helped Silicon & Synapse make a name for itself. We speak to Alan Pavlish to find out how the game came to be

Words by Adam Barnes

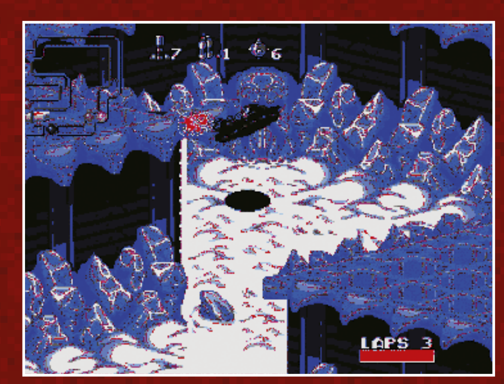


» [SNES] Once you knew the levels well, it was less about upgrades and more about your ability to navigate danger.

Sound isn't one of those things that often comes to the forefront for classic games, and even more rarely are they in a positive light. If we were to admit it to ourselves – which we won't – some retro gaming can be as much about enduring repetitive beeps and bloops as it is about adoring the actual gameplay. But *Rock N' Roll Racing* is one of arguably only a handful of games whose mere mention can bring certain sound effects, dialogue or audio rushing into the heads of fans. That's not to say that this is the only reason to have whiled away the hours drifting high-speed cars around various planets, but it's almost certainly the one that everyone will remember it for. In fact, just seeing these images on the page will likely summon phrases that had been long buried at the back of your mind: "Rip… is about to blow!" may be one such quote; "Jake… jams into first!" even; or maybe the simpler but just as iconic "Holy Toledo!"

What is interesting is how completely separate Silicon & Synapse's *Rock N' Roll Racing* seems to be; the sequel was all but ignored and there was no 'direct' predecessor meaning that to the uninitiated it seems to have been the only one of its kind. But its core game design had its origins in much earlier titles. Initially this was actually born off the back of the rather overlooked predecessor *RPM Racing*, but this was itself based on the design of *Racing Destruction Set* – an Electronic Arts game on the Commodore 64 that utilised a very similar style of racing. The problem was that *RPM Racing* was one of the first games developed by an American developer for the SNES – also Silicon & Synapse – and ended up suffering because it targeted high resolution graphics at the cost of everything else. As such, there was much that needed working out. "We liked *RPM Racing*," says Alan Pavlish, designer and producer on *Rock 'N Roll Racing*, "but we wanted to do something better." It was already at this early stage that the idea of sound was considered, because – as Alan puts it – if you're listening to good music while you're driving, "you tend to drive faster". There were a number of criteria that this sequel – which was in development as simply '*RPMII*' – needed to meet, but the idea of implementing rock songs was number one. "It just gives racing a great feeling," he adds. "You know, when you're developing games and you do demos for games, if there's no audio in them you kind of – even though it's only a small technical part of the game – lose half of the game. Half of the emotion of the game comes from the idea and so while it didn't drive the game design, it certainly drove the emotional impact of the game itself."

That term there, *emotion*, is an important one. It wasn't just about creating something high quality ▶



» [Mega Drive] The ice planet was particularly challenging due to the slippery track, but at this point you really needed to have at least the Battle Trak.



IN THE KNOW
» **PUBLISHER:** Interplay
» **DEVELOPER:** Silicon & Synapse (Blizzard)
» **RELEASED:** 1993
» **PLATFORM:** SNES, Mega Drive
» **PLATFORM:** Racing

> "We liked RPM Racing, but we wanted to do something better"
> Alan Pavlish

Meet the racers

SNAKE SANDERS

With bonuses to acceleration and top speed, Snake is the character most pick at first, even though his handling is dire.

IVANZYPHER

This furry fellow is *Rock N' Roll Racing*'s token Chewbacca. Unfortunately, he's also statistically the worst character.

JAKE BADLANDS

With a combo of boosts to acceleration and cornering, this badass is easily the best for newcomers to the game.

OLAF

Making a cameo from *The Lost Vikings*, Olaf is a secret character that comes with bonuses to every single statistic.

SHRED

The other 'filler' character, Shred is a colour swap of Rip. Just like his parallel, you'll see Shred a lot in the campaign.

GRINDER X19

This alien is the rival of Drakonis, but is mostly threatening since he'll be the first opponent in the turbo boosting Air Blade.

ROADKILL KELLY

Roadkill Kelly and his homeworld of New Mojave is the start of when things really get tough in the game.

CYBERHAWK

This guy has boosts to acceleration and jumping, meaning he's good at getting over those bumps smoothly.

KATARINA LYONS

Katarina would be a good choice for newbies, thanks to her improved cornering, but her speed suffers pretty badly.

TARQUINN

Tarquinn isn't likely a popular choice, but his skills make him perhaps the best overall playable character.

RIP

One of the standard enemy characters that you'll come up against throughout *Rock N' Roll Racing*'s campaign.

VIPER MACKAY

The 'boss' of, Chem VI, Viper rides around in a Marauder and will be the one you're chasing in your yet-to-be upgraded car.

RAGEWORTT

Quite clearly styled on the Incredible Hulk, this angry green beast is the main driver of the water planet Bogmire.

BUTCHER ICEBONE

His planet, NHO, is the first time the Havac is available, and with all that ice it's highly recommended you get it.

JB SLASH

Essentially the last boss of the game, JB Slash is the charming-looking fellow that leads the racers in Inferno.

and fun, but instead it was about creating a game that *felt* fast as much as anything else. The biggest issue with *RPM Racing* was that it was slow and clunky, it didn't have a sense of speed that Silicon & Synapse had wanted to implement. With the decision to include fast-paced rock-and-roll music into the sequel, there needed to be a pace to it that wouldn't feel out of place. "On the technical side, this meant sitting with the programmers and designing the physics. We wanted the cars to be able to slide around the corners for the great feel of it," says Alan, again eluding to an intangibility to the game's design, "so that they're not just on rails." This was one of the most significant aspects of the game, the drifting enabling both a skill and a thrill that its predecessor with its slow, stuttered cornering simply couldn't match.

"The sliding aspect of it was important for us to get just right," adds Alan. To really perfect that 'feel', though, there was so much more that needed fine-tuning. The bumps as racers collided with one another or the walls, the exaggerated jumps over hills and the various environmental traps that could cause erratic spin-outs. It was a process of testing and iteration to really ensure the racing could match the rock and roll attitude of the game. "We just added in little things, as you got higher in levels we added more complexity to it. We had to ask, 'Does that feel natural? Does it feel like you connect to the game?' That's the art of game design; if we liked it, we figured that there was a good chance that others would too."

But it wasn't solely about skill. For as important as the player's ability to properly predict corners was – and therefore their ability to safely drift around it – Rock N' Roll Racing was also an RPG, which was rather novel at the time. Again the heritage of the games that came prior had given birth to the concept of adjustable vehicles (*Racing Destruction Set* had customisable tyres and equipment), but Silicon & Synapse pushed this into further territory. "Imagine a roleplaying game," explains Alan, "where you build up a character, you kill some monsters, you level up and you get new swords, magic spells and things like that. The design of this game was meant to be designed with that in mind, but with a car." This meant that not only could players pick the type of car they wanted – perhaps one was quicker, one could take corners better or another was able to withstand more damage – but their chosen ride could then be upgraded over the course of the game. New vehicles could appear, too, each with their own particular benefits to help give a sense of progression. The Marauder, for example, which was pretty much everyone's starting car, offered plasma rifles, jump packs and traps that caused racers to spin out. But this soon gave way to the likes of the Air Blade, with its rockets and turbo boost, before ending up with The Havac that couldn't be beat. "The beauty of an RPG is that, if you design it well, it doesn't matter how good or bad you are as a player," says Alan, "you're always progressing forward."

But because this was more than just a racing game – which would typically require practice and, in the end, skill to beat – there needed to be care to ensure that players would progress smoothly through the game. As it happens, the team had an interesting solution to this: "We actually played this on paper," recalls Alan. "We had all these rules, and there was maybe five or six of us sitting around a table. We would each pick a car, and then we'd roll some dice to randomly decide who would win. Then we'd go around the room, we'd do a race on paper, we rolled dice to see what place we would come in, what we would get. Just literally a half hour on paper design meant you could see the progression, if it was working or not working and you can see where it's not working very quickly."

Partway through development, however, there was not one, but two name changes. Silicon & Synapse



DEVELOPER HIGHLIGHTS

THE LOST VIKINGS
SYSTEM: VARIOUS
YEAR: 1992

DIABLO II
SYSTEM: PC, MAC
YEAR: 2000

OVERWATCH (PICTURED)
SYSTEM: VARIOUS
YEAR: 2016

> "We wanted the cars to be able to slide around the corners for the great feel of it, so that they're not just on rails"
> Alan Pavlish



» [Mega Drive] The Battle Trak car had tracks instead of wheels, which meant you were immune to certain track dangers.



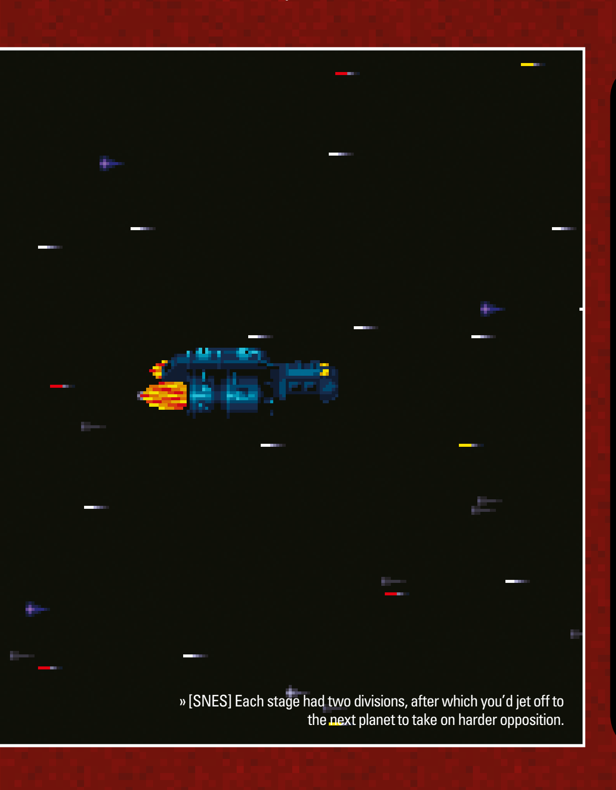
» [Mega Drive] The Havac had weaker homing orbs that could be used for defence as well as attack.

would ultimately give way to Blizzard – and in fact different versions of the game use different branding – but much like the company's name change, there was now an opportunity to really stand out as something new, something bold, something *cool*. Rather than use it as a sequel to a rather overlooked title, *RPMII*'s new name needed to be just as strong as the audio tracks: *Rock N' Roll Racing* was born. The look of the game was already taking on a more suitable style, the various planets and racers really harnessing a unique sense of attitude. And with the decision to add fast-feeling rock-and-roll music to the game, Alan had already begun the arduous task at the start of development – but it wasn't a particularly easy task. "Certainly without the internet it was a lot harder than it is today," recalls Alan, "but there was a company in New York that I ended up connecting with, and they specialised in music licensing. We wanted the sync licence, which allowed us to use the music but not the actual recording of the lyrics or the performance of the song itself. We got sheet music, basically, and we had to redo the music performance ourselves." Alan and the team put together a list of songs with a simple rule: if it made them want to drive faster, then Alan would try to include it. "I gave a list of 100 songs to the guy over there, and he parsed through what he thought we could maybe go get. There were some ZZ Top songs that I wanted, but they wanted a ridiculous amount of money. Led Zeppelin was on the list; people were asking us why we didn't put Led Zeppelin in there, well, they wouldn't do it." What started as a long list of 100 songs was whittled down, one after another the songs were too expensive or not available to use in a videogame. "So, we got the shortlist of 100 songs," says Alan, "and we ended up with five or six, and they were the ones that we could get for a reasonable price." It was worth the cost, though, since those songs had quite the impact on the experience, to the extent that many will think of *Rock N' Roll Racing* whenever they hear them. "Even today I'll hear a song and I'll remember that I used that song for *Rock N' Roll Racing*!"



» [SNES] There were six planets in total – at least on the non-easy difficulties – and each had their own particular look.

But that wasn't the only audio aspect that was important to include from the start of the development. "There was a local speedway announcer," says Alan, "and he did local speedway and racetrack announcing, he did some of the local commercials. I told the team 'I know exactly the announcer that I want to have, but I can't remember his name'. And I think it was actually on the way back from a CES trip driving back from Vegas to Los Angeles, me and four or five of us, we were just driving back having a good time and I suddenly remembered his name: Larry Huffman." The voice became arguably the most iconic thing about *Rock N' Roll Racing*, a small but important touch that created a sense of an intergalactic death race. Once the game released on SNES and Mega Drive in 1993 (or 1994 in Europe), it quickly became a huge success. The combination of Silicon & Synapse's bright and colourful art, slick vehicle handling and of course the fantastic audio made for a title that was hard to ignore, and led to a popularity that even Larry himself was affected by. "He got a lot of people talking to him about the game," adds Alan. "He would always call me up and say 'yeah, someone's just found out I did that game and they're big fans of it, they were so excited!' He got a big charge out of it." It's a shame that the voice of *Rock N' Roll Racing* didn't go on to do much else in the industry, but his unique tones were a large part of a total package that was evocative of speed, had quality and, most important of all, created *emotion*. It may have been the gameplay that kept you hooked on *Rock N' Roll Racing*, but it will be the audio that you remember – that, as Alan points out, is the power of sound in videogames. ★


» [SNES] Each stage had two divisions, after which you'd jet off to the next planet to take on harder opposition.

Conversion Capers



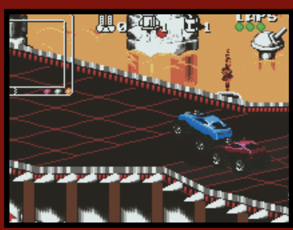
SNES

■ There were clear differences between the two home console versions, but neither was the definitive winner. The SNES version, for example, had more detail in various backgrounds and menu screens, even going so far as to including higher quality, rotating planets in the driver select screen – something that the Mega Drive could not match. However, its colours were a little more muted, which meant detailing in the cars and the levels was more restricted.



MEGA DRIVE

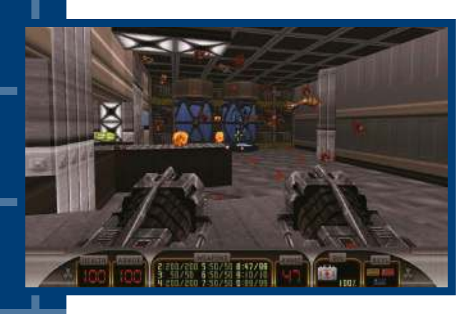
■ The higher contrast of the Mega Drive meant there was a noticeable difference between the two versions. Some areas suffered, such as the darker tracks barely showing up any detail at all, but for the most part it was a visually better product. The sound was also better, particularly the voice recordings. But where it really shined was with the its speed, utilising the Mega Drive to empower the high octane antics and to allow for subtly smoother steering too.



GAME BOY ADVANCE

■ Considering the hardware downgrade, the portable version of the game was a surprisingly solid port of the bigger version. The viewpoint was brought in quite a lot – which made it harder to see corners coming – but for the most part it was a like-for-like recreation. The finer points were still included on the vehicles and stages, and while the colours were a little garish it still managed to include all the different details – and, most importantly, play really well too.

THE ENGINE ROOM



BUILD

The life and times of the *other* FPS engine of the Nineties – here's how Build brought Duke, Caleb, Lo Wang and others to life in ways contemporaries just couldn't manage. And included the ability to use toilets in games, of course

Words by Ian Dransfield

BUILDING BLOCKS

» **DEVELOPER:** KEN SILVERMAN, 3D REALMS

» **RELEASED:** 1995

» **FIRST GAME:** LEGEND OF THE SEVEN PALADINS (UNRELEASED, 1994)

» **MOST RECENT GAME:** ION MAIDEN (2018)

» **PLATFORMS:** PC, VARIOUS

In 1996, two games were vying for attention in the PC gaming world: *Quake* and *Duke Nukem 3D*. *Quake*, created by the already legendary team of coding geniuses behind *Wolfenstein 3D* and *Doom*, was the powerhouse of the duo. The industrial-medieval FPS raised the bar for the genre as a whole, made fully three-dimensional shooters the norm, and changed the face of online multiplayer forever. It was – and is – one of the most influential games ever made, and rightly appears on lists of the greatest of all time wherever you look. The other game said '3D' in its title, even though it wasn't truly 3D.

It should have been cut and dry – a clear cut case of one franchise wiping the floor with the other, such was *Quake*'s undeniable technological weight, as well as the huge amount of hype behind its release. And yet… we still talk about this competition, we debate about which is the better game, *Quake* or *Duke Nukem 3D*. Even though one game was backed by what became one of the most iterated and built-upon engines of all time, we still fondly remember the *other* one. *Duke Nukem 3D*, you see, goes hand in hand with the Build engine – and the Build engine changed first-person shooters as much as *Quake*'s, even without that fancy *actual* 3D lark.

For you see, Build was the pluckiest of underdogs; an engine that might not have had the most grunt of the mid-Nineties behind it, but one that offered a simplicity and straightforwardness – as well as efficiency – that hit an indefinable sweet spot for developers. And as if this were a story being written specifically to throw twists and turns at the feet of you, dear reader, the man behind Build was… well, a teenager.

Ken Silverman was a 17-year-old born in New York State (and relocated to Rhode Island when his father took on a professorship at Brown University), who had been tinkering with programming from a young age. His experimentation and dedication to the hobby of making stuff took a turn for the professional in 1993 with the release of *Ken's Labyrinth* – this *Wolfenstein* 3D-inspired first-person game caught the attention of Epic Megagames (well before the days of the Unreal Engine), which eventually released it under the then-typical episodic shareware model.



» [PC] It looks good in screenshots, but 1995's *Witchaven* is an empty, aimless and utterly boring experience.

Ken's Labyrinth was pretty simplistic – though it featured the ability to interact with vending machines, foreshadowing things to come in Build games – but it did act as the catalyst for Ken's career. A few months later in 1993, just before he started at college, the teen had signed a contract with Apogee Software to create what would become the Build engine. "After the release of *Ken's Labyrinth*, id [Software] put out a press release and some screenshots of *Doom*," Ken remembers. "Naturally, I was curious to try to make my own, just as I had done with *Wolfenstein 3D* and *Comanche Maximum Overkill*. I started playing around with an angled wall renderer in March of 1993."

These experiments were encouraged by Ken's father, who convinced his son to pitch the nascent engine out to publishers around the States. In one of



» Ken Silverman is the brains behind Build, having created the original demo of the engine.



» [PC] The *Witchaven*'s sequel made some amends for the original's poor showing, but was still ultimately lacking.

> **“ Compared to Doom, Build had a smoother framerate – because Doom limited its fps to 35 ”**
> Ken Silverman

those cute quirks of fate, it was Scott Miller's Apogee that showed the most interest, this being the company that both created the shareware model, as used for *Ken's Labyrinth*, and gave what became id Software, the studio behind *Doom*, its first break. It is, after all, a small industry. "*Ken's Labyrinth* was less a game, and more of a demo, showing that it wasn't just the geniuses at id who could pull off fast 3D gaming technology," Scott explains.

"[Ken] contacted us and we discussed working on a project together," he continues, "I mentioned that I could put together a team to use his engine. Ken showed us a demo of his Build engine, which would be similar to the engine he knew that id was creating for their coming game, *Doom*." It was in such an early state that Ken hadn't even thought of a name for his creation – but with the program file itself called build.exe, the decision seemed a simple one and so the Build engine was born.

With college approaching – Ken would attend Brown to major in Applied Maths – negotiations about time and study were delicate. With his father helping out in deciding employment arrangements, Ken soon signed up with Apogee and began work in a professional capacity on the engine. Build as we ended up knowing it was born, and soon enough the tech started to speak for itself.

Unfortunately, while the tech impressed, the first two games using Build – both from Capstone Software, and both released in 1995 – were underwhelming to say the least. *Witchaven*, a fantasy first-person RPG, had some good ideas but was ultimately *incredibly dull*, while *William Shatner's Tekwar* was a wildly ambitious, absolutely terrible cult non-classic. Both titles, though, showed the underlying promise of what Ken had been working on – now full-time after taking a temporary leave of absence from his studies – and it was apparent that Build had a lot of positives over what the *Doom* engine had wowed everyone with just a year or two previously.

"Compared to *Doom*, Build had a smoother framerate – because *Doom* limited its fps to 35 to support simple networking," Ken explains. "With Build, I had to implement interpolation for the player, sprites, doors and so on, to support rendering at an independent framerate from the physics/network code." Though players probably weren't picking up on such technical aspects of what Build offered, there were some things shining through immediately – sloping floors and ceilings differentiated it from *Doom*'s engine, and there was a much bigger push towards interactivity in the games created with Build, likely brought to life thanks to a map editor ▶



» [PC] How many times has Hollywood Holocaust been replayed? It is absolute peak Build.

TECHNICAL FEATURES

SECTORS

■ The magical 2D segments used to build levels that then appeared 3D, sectors are the building blocks of any Build game. Sectors allowed destructible/dynamic areas in games, and are therefore amazing.

VOXELS

■ Not something you might associate with Build immediately, voxels came into play post-*DN3D*, with weapons in *Blood* and switches in *Shadow Warrior* employing the newer tech.

ROOM OVER ROOM

■ Sectors in the original Build engine couldn't be stacked on top of one another, meaning developers had to be creative in how they made buildings, staircases and so on. Visual trickery goes hand-in-hand with Build.

» [PC] (Top) *Duke Nukem 3D* become such an important Build game, many later games used a modified version of it.

DEFINING BUILDS

The engine's best games

DUKE NUKEM 3D

■ Three titles might have predated Duke's 1996 outing – one using an unreleased version of Build, illegally – but it was 3D Realms' shooter that introduced the world to what Build could do, and what first-person shooters could be. Endlessly inventive, rarely bettered to this day, *DN3D* defined an engine and – arguably – an era.



BLOOD

■ The name wasn't a lie. Developed by Q Games, itself acquired by Monolith during its creation, *Blood* stands tall as one of the absolute best Build titles. Up there with the *Duke*, no doubt, *Blood* built on 3D Realms' foundations, offering intricate level design, deeper tactical play and – of course – *plenty* of blood.

SHADOW WARRIOR

■ The only title from the Build era to have seen a successful reboot, the original *Shadow Warrior* is still as enjoyable today as it ever was. Another following the typical, brilliant path of Build, *Shadow Warrior*'s sprawling levels were littered with ultraviolence, pop culture references and, let's be honest, dodgy casual racism.

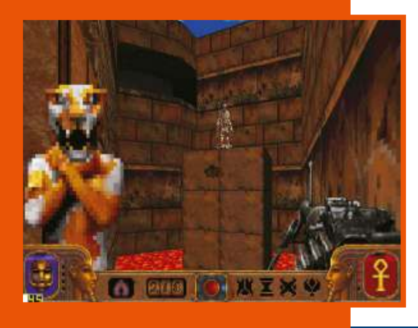


REDNECK RAMPAGE

■ While Build formed the foundations, *Redneck Rampage* was actually crafted on top of *DN3D*'s engine specifically, meaning it didn't bring much in the way of unique features to the fore. What it did bring was an endlessly silly, often funny, usually very difficult tale of rednecks… well, on a rampage against alien invaders.

EXHUMED (AKA POWERSLAVE)

■ Console releases for the PlayStation and Saturn might be the more well-known versions, but the PC version of *Exhumed* specifically used Build. Such was its usability and simplicity, Lobotomy Software's supernatural shooter looked very much at home on the PC.



"It was stressful being asked to implement things that I had never done before"
Ken Silverman

▶ that allowed designers to quickly switch from editing to playing on the fly.

"The Build engine was quite an improvement over id's *Doom* generation of engine tech," Scott says. "Build had slopes, looking up and down, destructible walls, it could do room-over-rooms [with a bit of jiggery-pokery behind the scenes – **RG**] and catwalks, and several other nice improvements." The praise wasn't just coming from his employers either, with even id's own John Carmack a very public fan of Ken – even offering advice on improving Build at an early stage. But there was still no killer app – nothing beyond capable tech and a hardworking, albeit stressed, young coder.

"There were plenty of good and bad times," Ken remembers. "It was stressful being asked to implement things that I had never done before. Before Build, I had never written code that was to be used by others. And figuring out the networking code was quite a challenge." But it wasn't all bad, as Ken continues: "My favourite part of working in a team was watching others use the engine or tools in cool ways that I never thought of. When you're the only one making significant contributions, nothing is a surprise – and that gets boring quickly."



» [PC] *World War II GI* is the last commercial Build release to date, and it's best to leave it alone to gather rust.

With a renewed energy as part of a team – and all the help that comes with working collaboratively – Ken and the Apogee team (soon to be rebranded as 3D Realms) would unleash what it had been working on for some time. For you see, Build wasn't being *built* apropos of nothing – there was a certain 1996 FPS being crafted in and around the engine, informing as much of Build's development as the underlying code informed the game. January 1996 hit, and with it came *Duke Nukem 3D* – Build's killer app, and the game that showed you didn't actually need all the fancy tricks in the world id was showing off to make a game a true great.

Duke was different – not the typical run-and-gun we were used to by that point, the game (as well as jogging and blasting) encouraged exploration and experimentation, rewarded interaction (ten health for using the toilet, natch), and presented players with levels that



BUILDING A PROFILE

What makes Build engine games stand out

BOOMER

■ If there's one defining sprite from Build, it's that of the explosions. Minor variations abound, but once you know them, you know when you're looking at Build.

TRANSDIMENSIONAL

■ *Doom*'s engine fudged the 3D effects, and Build was no different. Differing heights for ceilings and floors meant it offered a more convincing illusion of 3D, though.

LIGHTEN THE MOOD

■ Lighting was by no means new in Build, but almost every game that used it had to show it off in some way – meaning most Build titles have light switches to mess about with.

AN ATTITUDE THING

■ While not a design element of Build, the simple fact is most games using the engine featured absurd levels of blood and gore. How very emblematic of the Nineties.

YOU KNOW ME

■ There's a distinctive look to all of Build's enemies – similar, maybe, to those of *Doom*, but definitely their own thing. Detailed but pixellated, it's a standout look.

NOT THE FIRST

■ *Duke Nukem 3D* wasn't the first FPS, nor was any game using Build; rather they were all games entering an established, growing genre.

would and could dynamically alter on the fly. Who could have predicted those earthquakes that hit in the very first level, warping and destroying part of the building you're in? It was a revelation, even if on paper it looked like the other 2.5D engines of the time.

"Build is just so well suited for manipulating levels in real time," Scott says, "such as falling buildings, exploding walls that lead to new areas, interactivity, and the vast size of levels and high speed of moving around." This countered id's design philosophy at the time, which veered much more towards simplicity and focus: "That was very valid and successful," Scott says, "But with Build we decided to go overboard with features that, in the end, we thought would set us apart and allow our games to do all sorts of things that other games weren't doing."



» [PC] The ambition of *Tekwar* was never in doubt, with early open worlds shown off via the power of Build.

The line had been drawn in the sand – Build, an otherwise limited engine, would provide developers with the ability to make something technologically better than *Doom*, and for far cheaper than what that license was being sold for. *Duke Nukem* brought tight action and a thoroughly compelling game with more than enough silliness infecting it to have set out the stall. Build was to be for the ambitious few, on a low budget, who liked to muck about.

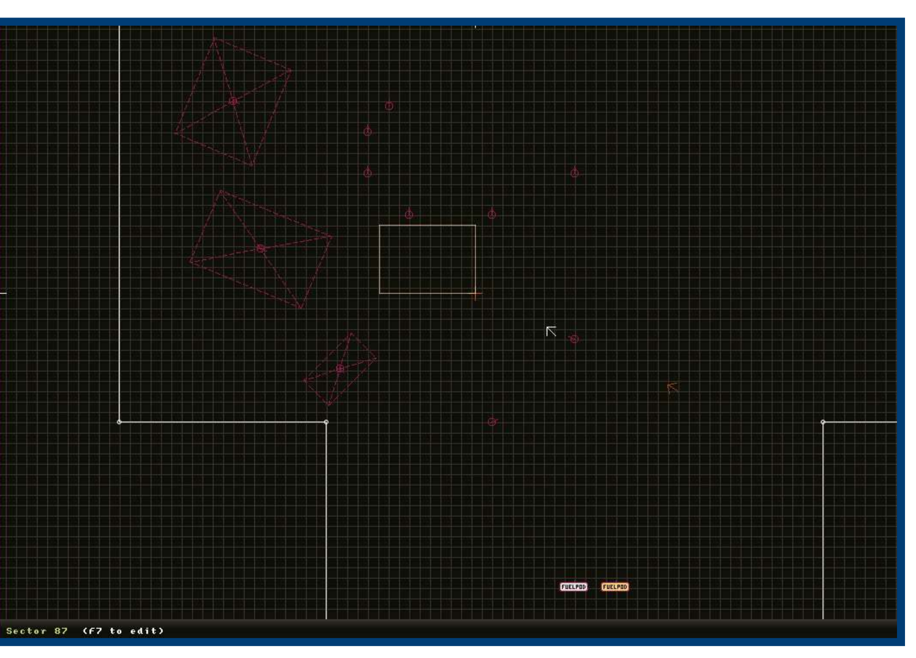
"We started on *Blood* in early 1994, long before *Quake* was released" Peter Freese, lead programmer on Monolith's excellent 1997 shooter explains, "At the time, there weren't many choices for licensable engines available. There was the choice between the *Doom* engine, which was outside our budget, and building our own technology from scratch. Working with Apogee – we originally started out as an Apogee studio – gave us access to the Build engine via our publishing agreement through Apogee."

Peter goes on to say he and the *Blood* dev team found Build to be a 'competitive' engine, but one with limits that were readily apparent: "There were a lot of limits in the types of environments we could create," he says. "But in a way, being more limited allowed us to be more creative in other ways… Because we were constantly struggling against things we couldn't do with the engine, versus a full-3D engine, we had to come up with crazy ideas to distinguish ourselves. The room-over-room trick that we created was one example of this."

Enforced boundaries frequently make for creative solutions to problems, and the lack of coasting was apparent on *Blood*'s release. Today considered one of the best of Build's releases, along with *Duke 3D*, *Shadow Warrior* and – to a lesser extent – *Redneck Rampage*, it offered a macabre tale filled with gore, backed up by creative scenarios, puzzle-solving, exploration and weapons. Nobody who played *Blood* can forget the aerosol/lighter combo. ▶



» Apogee/3D Realm's Scott Miller was a supporter of Build right from the beginning.



» Build continues through EDuke32, with Mapster32 being the tool provided to create levels and even entire games.

Releases using Build had quickly shed the moniker of '*Doom* clone' and become their own, captivating thing – even in a post-*Quake* world where many eyes were on the big boy of the genre, Build was backing some of the greats of the mid-Nineties. In fact, in some ways Build had even managed to scoop *Quake*, according to Ken: "People may point out that *Quake*'s networking code was better due to its drop-in networking support, [but] it did not support client side prediction in the beginning," he explains. "That's something I had come up with first and first implemented in the January 1996 release of *Duke 3D* shareware. It kind of pisses me off that the Wikipedia article on 'client side prediction' gives credit to QuakeWorld due to a lack of credible citations about *Duke 3D*."

It wasn't all grit-and-spit, of course – Build always had some fine positives that kept developers using it and helped them bring out the likes of the 1997 double-whammy of *Shadow Warrior* and *Redneck Rampage*. Each iterated on what had come before, modifying



» [PC] Ancient Egypt arguably looked better on console, but it was on the PC where *Exhumed* was the most fun.

and speccing up the underlying tech while ladling on a fair amount of snark, cheek, silliness and *questionable* content. "I think Build and *Duke* go hand-in-hand, with each raising the stock value of the other," Scott muses. "I think that *Duke Nukem 3D* set the tone for Build engine games, especially with humour, talking characters, pop-culture references, and other craziness. Again, id Software made very serious, streamlined games, so we took our games (*Duke Nukem 3D* and *Shadow Warrior*) in a different direction, and the other teams who licensed Build followed our lead, I guess."

On a technical level there were benefits too, with the aforementioned streamlined editor proving a hit with anyone making levels: "Probably the best, most innovative, feature of Build was its 3D Editor," Ken explains. "As it allowed you to edit inside the game itself in the full 3D mode, I believe it was the first game engine to support this." Peter, meanwhile, is a fan of Build's optimisation: "Build had really excellent rendering performance," he says, "Which was difficult to achieve on desktop hardware at the time. There was some crazy optimised assembly texture mapping code that enabled us to achieve great framerates while still spending processor time doing gameplay stuff."

Ease of use, smart optimisation, clearly defined limits pushing developers

STILL BUILDING

Because obviously if you're making a game, use a 20-plus-year-old engine

The Build engine, apparently, cannot be killed by conventional means. While the technology behind it is objectively outdated and has been outclassed by plenty of other engines the fact is, in 2018, there's a new game using the Build engine. *Ion Maiden* is actually based on EDuke32, a source port of the original Build, but for all intents and purposes this is a brand-new, commercial release using a 22-year-old engine.

"The original idea was to make a companion game for *Bombshell* [a top-down shooter released in 2016] that would explain the main character's backstory," Scott Miller explains, "But as the project went along we saw it as something that could stand on its own and deserved more development time and effort. We came to the realisation that the Build engine can still be the foundation for a really fun game."

There are limitations to factor in, but decades of experience with Build, knowing what it's capable of – and what its limitations are – means the team at Voidpoint is working from an advantageous position, and it shows. The preview episode (think shareware for the Steam generation, meaning you have to pay for it) shows an accomplished, confident FPS full of the kind of creativity we all love from games of the engine's past.

"We had to live within the engine's core features and abilities," Scott admits, "Build was designed as a single-player and deathmatch engine, so these are the modes we're sticking with. If there's a chance to include co-op, we'll do that, but that mode hasn't been nailed down and tested yet." With that in mind it's little surprise the game is single-player only. But again, that's a feature harking back to the simpler Nineties, when not everything had to be online.



» [PC] *Ion Maiden* looks lovingly old school, and that's because it's powered by dusty tech.

Happily, Scott and the 3D Realms team aren't set on leaving it with *Ion Maiden* – there are already plans afoot for more games using Build, or at least the modernised version of the classic engine. "We are diligently looking into making at least a few more Build engine games," he says, "But it's important to note that the Build engine has been significantly beefed up since the Nineties, largely by VoidPoint. They know the engine better than anyone in the world, and have added several key features that upgrade it over the Nineties version of Build, such as larger map sizes, seamlessly connected levels, and far better lighting."

Ion Maiden might look like it's jumped through a time portal from the Nineties, but if you tried to get it running on a Pentium MMX desktop of the era, you would fail. It might use the base of the older tech, but this is a modern game in a lot of ways – and one that has definite appeal to fans of the Build era.





» [PC] As openings go, *Shadow Warrior's* was up there with the most intense of the time – straight into the action, and gore aplenty.

to work within boundaries, and an anarchic, devil may care, very Nineties attitude behind its games. Build from 1996 to 1998 *mattered*, and its many positives kept an objectively inferior engine fresh in the minds of many. But it wasn't 3D, and it wasn't ever going to be, and the world had gone for that extra dimension. Developers moved on, the engine was left treading water, and history had all but stopped recording the trials and tribulations of Build, the plucky engine that could.

As brightly as it burned for a few years, by 1999 – aside from another *Duke Nukem* expansion pack – there was little to celebrate using Build. *NAM* and *Extreme Paintbrawl* offered absolutely nothing memorable, and 1999 saw the final commercial release using the Build engine: *World War II GI*. It was, as you may have gathered from the fact you likely don't know what it is, ignorable at best. With releases



» [PC] Build games typically had a comical flair. Aerosol plus lighter equals… well, this.

"Probably the best, most innovative, feature of Build was its 3D Editor"

Ken Silverman

(the first illegally) from 1994-1999 and seeing three genuine classics, and one arguable, redneck, classic, Build had a good run. But it was over.

Ken Silverman had already moved on by this point, returning to his studies and graduating, working on some other engine projects – including an early version of Build2, available on his website – before ending up at Voxon Photonics, working on a 3D volumetric display known as the Voxiebox. While it was the end of Ken's story with the engine he created, though, it turned out not to be the end for Build itself – 3D Realms announced in 2018 it would be publishing *Ion Maiden*, a brand-new, commercial release using EDuke32, a modernised source port of Build. Who needs Unreal, right?

Strangely enough, we're living in a world where a 20-plus-year-old game engine is being used to create a new commercially released game, and where the gatekeepers of said engine are looking to bring more proper, full titles to release using the modernised version of Build. On one hand, it could be a wave of nostalgia – cloyingly devoted to a technology that has been bettered many times over, monetising our rose-tinted natures and charging us to remember the Nineties. But then, on the other hand, this could all be testament to the fact Build is, and was, an engine supportive of and supported by very creative developers and designers. Sure, it's a move backed by nostalgia, but that nostalgia itself is backed by release after release in the mid-Nineties of all notable in their own way – games of true uniqueness, games of genuine quality and inventiveness, games that had great ideas realised through Build's robustness, games featuring William Shatner. Build had it all, and it might just be that modern developers still want to tap into that resource and give us a few rose-tinted memories to look back on in 20 years' time. *

» Peter Freese was lead programmer of *Blood*, one of Builds most iconic, and, well, bloody games.



CLASSIC MOMENTS

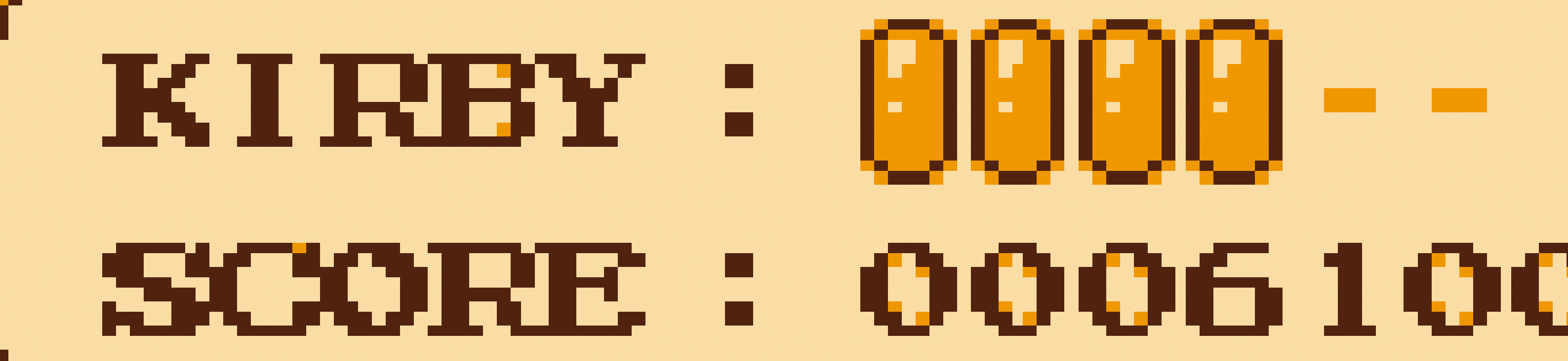
Kirby's Adventure

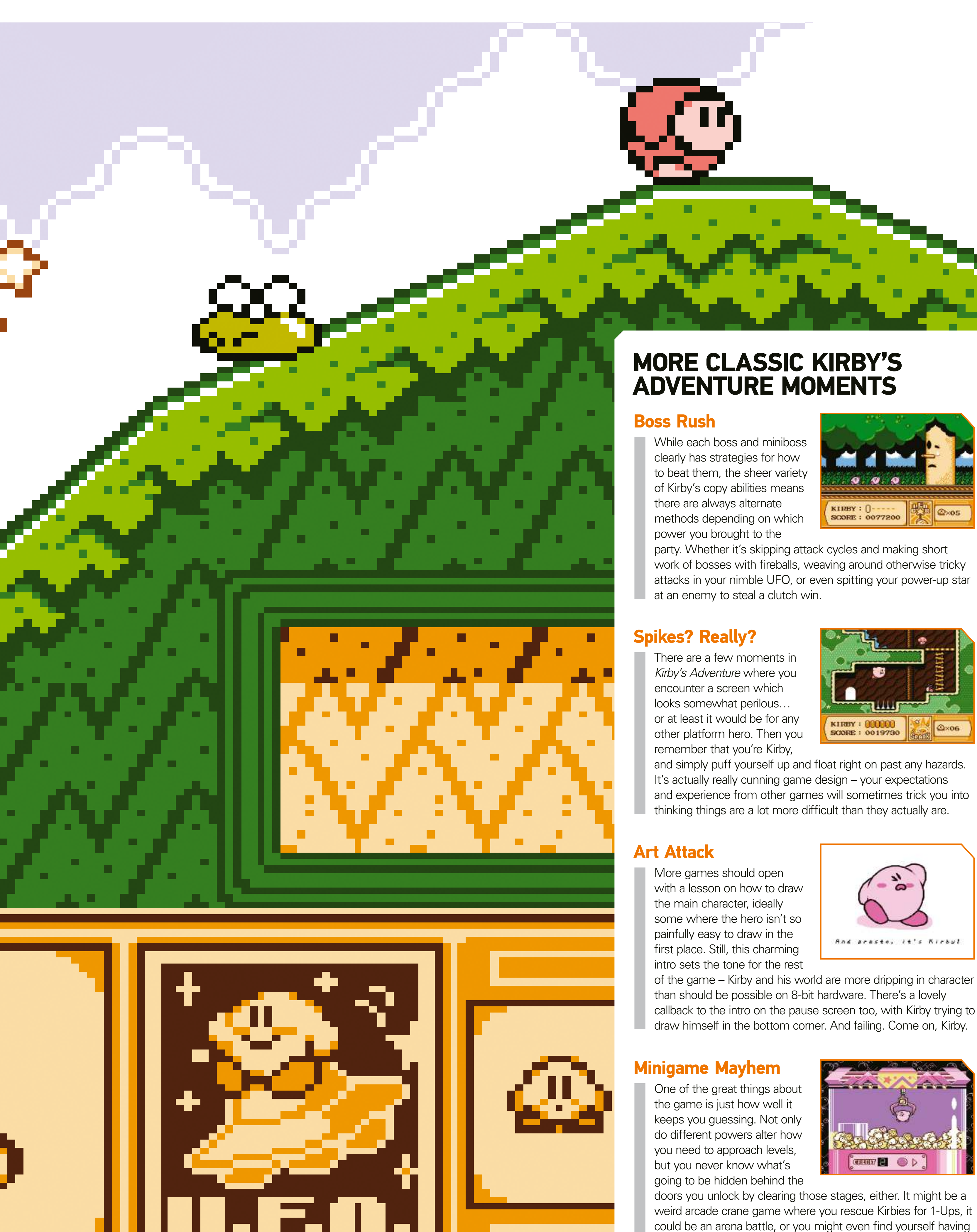
» **PLATFORM:** NES » **RELEASED:** 1993 » **DEVELOPER:** HAL LABORATORY

We do love a good secret area, and this late NES favourite is loaded with them. For instance, did you know it's possible to obtain the super-powerful UFO transformation in the very first level of the game? Probably not, if you're anything like us – we've walked right past this sneaky little area countless times in the 25 years since the game launched and never once even thought to investigate. In the second part of 1-1, when you reach the waterfall, simply inflate and float under the left-most block to be whisked away to a secret room containing just a single UFO enemy. It'll get away if it hits you or you take too long, so gobble it up quick then enjoy the power trip of soaring over entire levels at speed and blasting enemies with lasers. It's testament to the game's quality that it's so packed with cool hidden stuff like this that we're still finding new things decades later, and each new discovery just makes us want to jump back in and explore every last inch of Kirby's colourful world in search of all the other stuff we've been blind to all these years. *

BIO

One of Nintendo's last first-party releases for the NES, *Kirby's Adventure* is one of the most impressive releases for the 8-bit console – few games push the hardware quite as hard as this, and its rich palette, sumptuous pixel art and clever use of graphical effects allowed it to stand out even next to crisper, more vivid 16-bit competition. It's also the game that introduced us to Kirby's ability to copy enemy abilities by devouring them, now a staple ingredient of the franchise.





MORE CLASSIC KIRBY'S ADVENTURE MOMENTS

Boss Rush

While each boss and miniboss clearly has strategies for how to beat them, the sheer variety of Kirby's copy abilities means there are always alternate methods depending on which power you brought to the party. Whether it's skipping attack cycles and making short work of bosses with fireballs, weaving around otherwise tricky attacks in your nimble UFO, or even spitting your power-up star at an enemy to steal a clutch win.

Spikes? Really?

There are a few moments in *Kirby's Adventure* where you encounter a screen which looks somewhat perilous… or at least it would be for any other platform hero. Then you remember that you're Kirby, and simply puff yourself up and float right on past any hazards. It's actually really cunning game design – your expectations and experience from other games will sometimes trick you into thinking things are a lot more difficult than they actually are.

Art Attack

More games should open with a lesson on how to draw the main character, ideally some where the hero isn't so painfully easy to draw in the first place. Still, this charming intro sets the tone for the rest of the game – Kirby and his world are more dripping in character than should be possible on 8-bit hardware. There's a lovely callback to the intro on the pause screen too, with Kirby trying to draw himself in the bottom corner. And failing. Come on, Kirby.

Minigame Mayhem

One of the great things about the game is just how well it keeps you guessing. Not only do different powers alter how you need to approach levels, but you never know what's going to be hidden behind the doors you unlock by clearing those stages, either. It might be a weird arcade crane game where you rescue Kirbies for 1-Ups, it could be an arena battle, or you might even find yourself having eggs and bombs chucked at you by that no-good King Dedede.



In 1990, Capcom finally released a sequel to its smash hit Commando from five years earlier. Taking control of those soldiers-for-hire, Wolf Force, its time to kick some ass!

Words by Graeme Mason

Way back in issue 138, Retro Gamer featured that all-American hero, Super Joe, as he charged through a virtual army of soldiers, tanks, jeeps and gun emplacements in the arcade classic *Commando*. Now, the wolf of the battlefield is back, and this time he's part of a covert three-man mercenary team on a vital mission that the US military cannot officially be seen to be involved with. While promoting world peace in central Africa, a former US president has been taken hostage by a group of dangerous revolutionaries. Unable to intervene directly, the White House has called upon the mercs to extract the dignitary from the fictional country of Zutula. This being a run-and-gun game, there's plenty of enemy fire, power-ups and massive explosions ahead; this team is many things, but covert is not one of them.

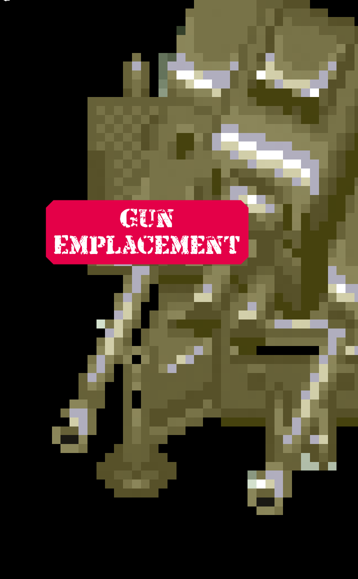
Released in Japan in 1990 as *Senjo No Okami II* (*Wolf Of The Battlefield II*), *Mercs* features three simultaneously playable characters: Super Joe, as we know is an ex-Green Beret, and now (for reasons not made clear by the game) a mercenary for hire. Joe is joined by Howard Powell, a former anti-terrorist operative and founder of the squad, and Thomas Clarke, previously of the US Air Force. Bland names for identical shirtless figures, save a change of colour, and each player has an eight-directional joystick and two fire buttons for a standard and extreme Megacrush attack. As the concurrent, and unusual, three-player play would suggest, *Mercs*' upright cabinet varied from the norm, with its extra-wide panel to accommodate the trio of combatants. And unlike *Commando*'s one-hit-dead system, there's an energy bar which decreases as the mercs take enemy fire. On the surface, this appears to make the game easier than its predecessor; we'll soon discover that *Mercs* makes up for this, and more, by throwing as much as possible at the player or players over the course of its six-and-a-bit compact, yet manic levels.

But first Joe and company must tackle one of the most deceptively easy first stages ever, the landing area. Dropped off on a secluded beach, the heroes make their way inland past token resistance from a handful of soldiers. Palm trees block their way and must be destroyed in order to progress, and there's a mildly tricky choke point there, and again at the aftermath of a rockslide just around the corner. After a brief sally through a collection of sandbags that are very reminiscent of *Commando*, the

HOWARD POWELL

HE WAS MADE THE LEADER OF A SPECIAL TERRORIST TASK FORCE AND FINALLY BROKE OFF AND FORMED THE MERCS IN 1986.

» [Arcade] Meet Howard, the all American hero…if the price is right.






1180
MACHINE GUN
ENEMY TANK
MEDAL BONUS
ENEMY SOLDIER
SPINACH
JOE
USEABLE JEEP



WEAPON MASTER

The explosive tools of the mercenary trade

ASSAULT RIFLE

■ This is the standard weapon of choice for our brave mercs, and it can be upgraded to a wider shot for even more mayhem. The assault rifle is a solid choice with reliable rapid gunfire, and it does its job very well against soldiers, however it is a little weak against armour, as you'd expect.

SHOTGUN

■ A slower rate-of-fire than the assault rifle, but deadly, especially close up. The wide angle range of the shotgun makes it especially useful against masses of soldiers, although again it's not the best against vehicles. Keep it handy, for close encounters.

GRENADE LAUNCHER

■ The grenade launcher spits forth explosive bombs with impressive speed, but not quickly enough to avoid leaving the merc exposed for a brief second. Its splash damage is useful for taking out soldiers, and it can also make mincemeat of enemy vehicles.

FLAMETHROWER

■ Limited in range, but deadly against all enemy infantry. The flamethrower also has a different control method to the other weapons as the merc continually bathes the battlefield in a fierce warm glow. Pretty dangerous to use against tanks, mind.

MEGACRUSH

■ Essentially a type of smart bomb, the Megacrush does exactly what it says on the tin – coming in steel-clad cases found on the battlefield – in crashing against all opposition: soldiers are destroyed instantly, while bosses and tanks take a sizeable hit.



“Funnily enough, we weren’t allowed to put our names in the game”
Anthony Ball

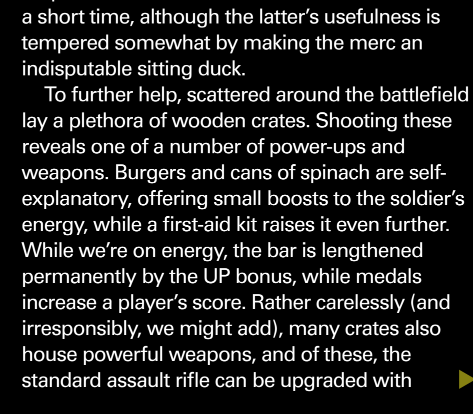
» [Arcade] In addition to a jeep and tank, the mercs can also jump into this zippy little speed boat.


THOMAS

mercs are already facing off against the end-of-level boss, a Harrier jump jet that’s easily dodged and subsequently destroyed. However, upon entering level two, things hot up considerably – you didn’t expect it all to be that easy did you?

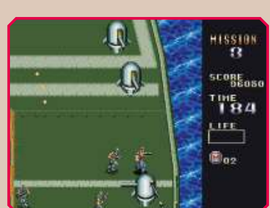
While a direct sequel to *Commando*, *Mercs* borrows considerably from another run-and-gunner. Released by SNK in 1986, *Ikari Warriors* took the template of *Commando* and added usable vehicles and a two-player option. In *Mercs*, to help the three heroic soldiers are several different types of vehicle that they can utilise at specific junctures throughout. A jeep provides adroit movement around the playing area, bolstered by a rapid-fire cannon, while the massive tank has slow, but destructive shells, tough armour and is difficult to steer, making it an attractive target for enemy soldiers. Additionally, there’s an armed speedboat and several gun emplacements that can be commandeered for a short time, although the latter’s usefulness is tempered somewhat by making the merc an indisputable sitting duck.

To further help, scattered around the battlefield lay a plethora of wooden crates. Shooting these reveals one of a number of power-ups and weapons. Burgers and cans of spinach are self-explanatory, offering small boosts to the soldier’s energy, while a first-aid kit raises it even further. While we’re on energy, the bar is lengthened permanently by the UP bonus, while medals increase a player’s score. Rather carelessly (and irresponsibly, we might add), many crates also house powerful weapons, and of these, the standard assault rifle can be upgraded with



CONVERSION CAPERS

MEGA DRIVE



■ The Mega Drive has a proud roster of arcade conversions and *Mercs* is no exception. While it lacks multiplayer, this version contains a new mode that has alternate maps, pickups and a level-up system. The conversion is spot-on, too, making it comfortably the best home port to play.

MASTER SYSTEM

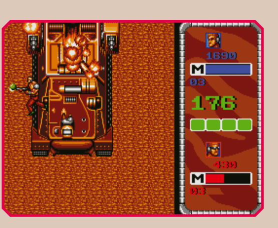
■ The Master System port also lacks a two-player mode, and includes the new mode. Despite a few graphical flaws and the predictable change in screen aspect ratio, this is a decent effort; tough, cramped and flickery in places, yet still retaining much of the appeal of the original.

COMMODORE 64



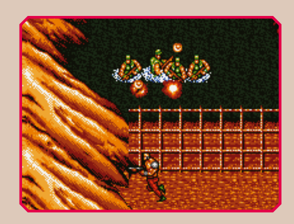
■ Comfortably the best of the 8-bit home computer conversions but that’s still not saying much. The C64 port has defined graphics, a sizeable playing area and a solid feel to its gameplay. It’s frustratingly tough to play, though, thanks to fast and trigger-happy enemy soldiers.

ATARI ST



■ The Atari ST version was something of an afterthought to the Amiga development, and as such doesn’t play to the strengths of the machine. The display is just as precise, but the scrolling is jerky and player movement slow, both of which suck much fun out of the game. A shame.

AMIGA



■ Tiertex didn’t have the best of reputations with its conversions on the 16-bits. This port is one of its more credible efforts, recreating both look and feel the original. The aspect ratio is retained, and there’s a two-player mode as well. The movement speed hampers gameplay, though.

ZX SPECTRUM



■ It’s another optimistic attempt by Tiertex to squeeze the colourful and fast arcade game onto the Speccy, and one that it almost pulls off. The speed is there, but this version resembles the original very little, including some incredibly weedy-looking mercs.

AMSTRAD CPC



■ You have to admire this effort for trying to convert as much of *Mercs* to the Amstrad as possible. But we can’t help feeling a little simplification of the game in order to increase playability would benefit it, though. This is a difficult version, too, thanks to a small play area.

BOSS RUSH

How to blast your way through this gauntlet of enemy weaponry

HARRIER JUMP JET



■ Rising dramatically from behind a cliff face, this VTOL aircraft hovers above the mercs, peppering them with machine gun fire.

HOW TO BEAT: Considering the aircraft's manoeuvrability, the harrier is actually easy to take down. Time your shots between each volley of fire, knuckle down and repeat.

LEVEL 2

TANK

■ Armed to the teeth with homing missiles and flamethrowers, the tank moves up and down the screen, reducing the mercs' wiggle room.

HOW TO BEAT: The initial assault is easy enough to avoid. As the tank begins to move up and down, things get a bit trickier – dodge, shoot when you can, shoot some more.

ATTACK HELICOPTER



■ Hovering into view from the right-hand side, this chopper boasts considerable armament, including four gun and missile cannons.

HOW TO BEAT: When it pauses to let off the soldiers, it's a good time to land a few quick blows. They are normal enemies, but can be pesky – eliminate them before continuing.



GUN BOAT

■ Chugging from right to left comes this lethal ship. Occupying the top half of the screen, this is another tough and intense boss battle.

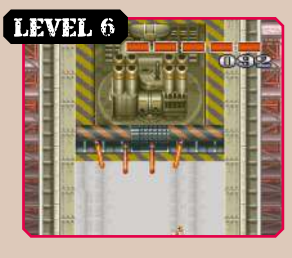
HOW TO BEAT: Keep an eye on the shadows of the bombs, as these show where to avoid. And beware that massive central gun that stretches its fiery arc across the whole screen.

RAIL GUN



■ Standing on a tiny railway trailer, the mercs are soon facing off against an imposing, heavily-armed train on the adjacent track.

HOW TO BEAT: After destroying the cannons, things get *really* interesting. Watch for the missile assault in particular, although fortunately these can be destroyed before they land.



MISSILE LAUNCHER

■ Its eight tubes fire four missiles at a time which home in on the player. Fortunately, the launcher itself is completely static.

HOW TO BEAT: The missiles on this boss cannot be destroyed by gunfire, meaning it's an exercise in avoidance. The attacks rain down constantly, so keep running and gunning.

HERCULES TRANSPORT



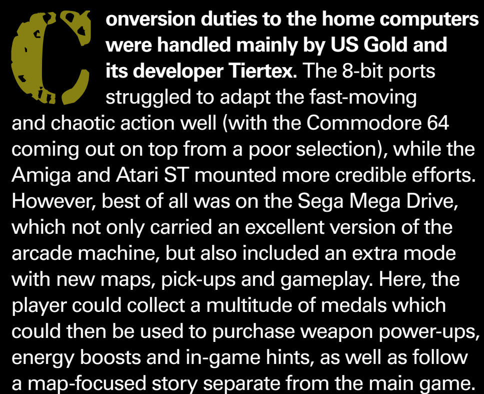
■ The rebels have the ex-president inside the Hercules transport and it must be destroyed before it takes off.

HOW TO BEAT: The biggest enemy here is time, and any spare Megacrushes come in very handy. The transport is not heavily armed, but with time limited, you can't afford to dodge its fire for long.



» [Arcade] Attack of the forklifts. Get out of their way or your done for.

▶ POW pick-ups, also featuring regularly in the boxes. Each mission ramps up the difficulty, with swarms of soldiers and enemy vehicles homing in on the mercs. After the initial landing, it's a journey through Zutula, firstly the nearby town where the boys already find themselves facing off against tanks, jeeps and gun towers. Then it's onto the port, and an enemy battleship laden with cannons and machine gun emplacements. After penetrating a nearby mountain pass to the enemy base, the mercs find themselves at the airport as a Hercules transport holding their target begins to taxi down the runway. Can they shoot it down in time and save the ex-president?



Conversion duties to the home computers were handled mainly by US Gold and its developer Tiertex. The 8-bit ports struggled to adapt the fast-moving and chaotic action well (with the Commodore 64 coming out on top from a poor selection), while the Amiga and Atari ST mounted more credible efforts. However, best of all was on the Sega Mega Drive, which not only carried an excellent version of the arcade machine, but also included an extra mode with new maps, pick-ups and gameplay. Here, the player could collect a multitude of medals which could then be used to purchase weapon power-ups, energy boosts and in-game hints, as well as follow a map-focused story separate from the main game.



In the arcades, *Mercs* remains an entertaining experience thanks its action-packed gameplay, catchy tunes and fun additions, such as destructible environments and multiple vehicles. It's far from flawless – the lack of a fixed firing mode, as pioneered by *Ikari Warriors*' rotational joystick, hampers the game, as the majority of enemies emerge from above your avatar, and this increases the difficulty even further. But for anyone looking for some hardcore action with more variety than the classic *Commando*, you can't go far wrong with this bullet-crazy rescue mission from the early Nineties. ✱

ANTHONY BALL

We quiz the Atari ST and Amiga coder about converting Mercs to the 16-bit home computers



Had you converted any other arcade games prior to *Mercs*, and were you familiar it?
Yes, *Cabal* for the NES, at Zippo Games. I then moved across to Tiertex as they wanted me to work on new protection and mastering schemes, and said I could also take my pick of arcade conversions. I really liked *Mercs*. It was set up for three players and a really fun multiplayer game.

Which version came first and did you work from an arcade machine?
The Amiga was first, but while programming that, I knew I had to also make the ST version, so we used the same graphics. We had the arcade machine and it was kept near the artists so they could make sure it looked as close as possible. We didn't have source code or original artwork, so the whole thing had to be coded and drawn from fresh. I videotaped myself playing the game so I could play it back on my desk over and over. I also made a map editor specifically for the game that would attach to a digitiser – we grabbed the screens from the game in RGB format and converted them to a much smaller colour palette for use on the Amiga and ST.

What sacrifices or changes did you have to make, if any?
We split one of the later levels into two huge levels, because the graphic style changed too much in the arcade game within one level, and the graphics would not have fit into the ST's memory if I was to make the ST scroll fairly smoothly like the Amiga. On the ST, scores were on a side panel and on the Amiga I tried to reproduce the tall narrow screen layout with the scores overlaid on the screen.

How well do you think you did?
I think it was fairly close, considering the time constraints we had. The Amiga version was better than the ST version, as that was coded in just a couple of weeks at the end of the project. If I'd had more time I could have done things slightly differently, such as using a barrel scroll and introducing more colours. Funnily enough, we weren't allowed to put our names in the game, but if you press the * key on the keypad then you should see 'Code:Anthony Ball Gfx:David Bland' on the title screen. We also had a secret 'clown's nose' mega weapon hidden at the very bottom right of the first level, in the sea. When US Gold spotted it we added a 'secret garden' full of power-ups and every weapon in the game – including the clown's nose. It was on level five, I think, and once you have that nose you could kill anything instantly!





Super Mario Land 2: Six Golden Coins

SORRY JOOLS...

» RETROREVIVAL

» GAME BOY » 1992 » NINTENDO R&D 1

What was your first gig? A lot of my friends say Blink 182, S Club 7, or even Busted. I'm a little conflicted on my answer; I usually say Iron Maiden (I was a 14-year-old metalhead), but it's technically Jools Holland circa 1997, though I sure as hell wasn't paying attention, I was hiding in a tent playing *Super Mario Land 2*, much to my parents' bewilderment.

It was a good show, don't get me wrong – the saxophone player climbed up into the stage's rigging for his solo... I at least caught that bit – it's just playing *Mario Land 2* was the better experience of that night. It's a testament to Nintendo's development team that it managed to condense the Mario experience down to a tiny green screen, and not lose a single bit of lustre.

It's a little cut-down compared to, say, *Super Mario Bros 3*, but I actually think the Game Boy *Mario Land* games are better. There's no faff like holding onto a power-up or anything like that, what you see is what you get. The world design is fantastic, too, mostly thanks to its non-linearity. You can tackle whatever world you want to in any order, and if you run into a level that's too hard, you can just back out and try another world.

The levels look great, too. My favourites are from Mario Zone, which culminates in a final Lego-themed stage and a Three Little Pigs boss fight – why they're hanging around in a clockwork Mario's head is anyone's guess.

So if you haven't played *Super Mario Land 2*, you're missing a trick. Grab a Game Boy and lose yourself. Just don't crack it out at your next concert; you'll end up missing the entire thing. *



Nintendo 64

» MANUFACTURER: Nintendo **» YEAR:** 1996
» COST: £249.99 (launch), £30+ (today)

When home consoles were ready for the leap to 3D gaming, the engineers at Silicon Graphics felt that they had the right technology to make it work. The company approached Sega with a console design, but the company's Japanese engineers were not convinced by the product and opted for their own design, resulting in the complex and over-engineered Saturn. SGI found a much more receptive partner in Sega's arch rival Nintendo – however, Nintendo would not make it to market until the middle of 1996, giving Sega and more importantly Sony a large head start in the market.

The raw power of the N64, in combination with the development talent Nintendo had access to, ensured that the machine played host to plenty of all-time classics, including *Super Mario 64*, and the unusual inclusion of four control ports enabled multiplayer classics including *GoldenEye 007* and *Mario Kart 64*. However, the decision to stick with cartridges instead of moving to CDs angered some publishers and kept game prices high for consumers, with some third-party games costing up to £70. Ultimately, the system didn't do as well for Nintendo as its predecessor and was heavily outsold by the PlayStation, but retains plenty of fans.

Nintendo 64 fact

■ The N64 is the only Nintendo console to have fallen to third place within its generation in the Japanese market, having been outsold by both the PlayStation and Saturn in that region.

PROCESSOR: 64-BIT NEC VR4300 (MIPS R4300I-BASED) CPU (93.75MHZ)
RAM: 4MB MAIN MEMORY (EXPANDABLE TO 8MB)
GRAPHICS: REALITY COPROCESSOR CUSTOM GPU (62.5MHZ)
AUDIO: 16-24X SOFTWARE DRIVEN 16-BIT PCM CHANNELS
MEDIA: ROM CARTRIDGE (UP TO 64MB)



EDITOR'S CHOICE Super Mario 64

The N64 feels like it was made specifically to play *Super Mario 64*, and the game alone could justify ownership of the console. The 3D worlds were revolutionary in the mid-Nineties, and remain engaging to explore even if they don't feel quite so expansive today. The quest to collect all 120 stars is always fun, but for us much of the joy of the game comes from simply controlling Mario. The way he leaps and slides around each area is simply perfect motion design – even today, we find ourselves perfectly capable of wasting time by just aimlessly jumping about in the castle grounds.

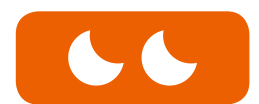


It's 15 years since Sony's EyeToy and its launch title Play put gamers on screen and made them part of the action. Retro Gamer cleans windows and karate chops mini ninjas with original team members Ron Festejo, Pete Marshall and Eric Matthews

Words by Paul Drury









IN THE KNOW

» **PUBLISHER:** Sony
» **DEVELOPER:** Sony London
» **RELEASED:** 2003
» **PLATFORM:** PS2
» **GENRE:** Party game

Ron Festejo remembers the exact moment when he knew he simply had to work on EyeToy. It was when Rick Marks, the creator of the technology, was brushing a cluster of spiders off his face.

"They were asterisks, actually, but Rick said we had to imagine they were spiders," laughs Ron. "I will never forget the reaction of the audience. Women gasped. Men smiled. I turned to my boss and said, 'I want to work on that!'"

Ron, who had previously been employed at Psygnosis and was then a producer with Sony, was part of a 2,000-strong audience of developers and marketing people at a conference organised by the company's European head, Phil Harrison. With the PlayStation 2 just launched, Phil invited Rick over from America to demonstrate his groundbreaking work on stage, which connected a camera to the console, and challenged the assembled internal studios to find a way to bring this exciting technology to market.

"One of our biggest challenges was figuring out what we were actually going to release," explains Ron. "We spent a lot of time pursuing the idea of a colour-tracking game that used a wand but colour-tracking is always dependent on good lighting, something you couldn't guarantee out in the real world. Phil made it clear, 'There can be no light issues'. I actually had that quote printed out and posted next to my monitor."

Initial prototypes had the player using a makeshift wand, essentially the plastic ball which came with the Aibo robot dog stuck on the end of a pencil, tracing shapes in the air to cast spells. Creating reliable gesture-recognition proved tricky, requiring lengthy calibration and consistently good lighting, and there was a jarring disconnect between the player's actions and the disembodied wand on screen. Plus a lucrative Hogwarts tie-in would be problematic given EA owned the *Harry Potter* licence.

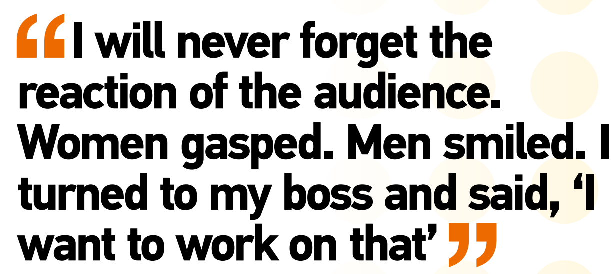
» [PS2] It's interesting to compare this early demo of Kung Foo with the released version.

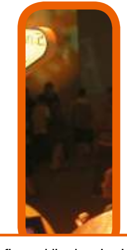
So the wand disappeared and instead it was decided to focus on using motion to control the action on the screen rather than colour-tracking. "It was just so immediate," says Ron. "You move and things happen, which was still magical in people's eyes. It reduced a lot of the lighting issues, too. The move to motion was absolutely the right decision but trying to convince people to work on small, motion-based games was hard going. They all wanted to work on triple-A titles!"

> **"I will never forget the reaction of the audience. Women gasped. Men smiled. I turned to my boss and said, 'I want to work on that'"**
> Ron Festejo

One such programmer was Pete Marshall. He was part of Sony's Camden studio, soon to be merged with the Soho studio to form Sony London, and was working on *Fall Of The Artificer*, a big-budget, high-concept, third-person action game. "It was going okay but then we visited our Cambridge studio and saw how they were getting on with *Primal*," says Pete. "We thought, 'Holy shit, these guys know what they're doing!' That got us thinking maybe we should be doing something else. I was at that conference where Rick showed his demos and the tech did look interesting, plus Ron was really into it so I thought, 'Maybe this will work?' I mean, I'm a coder so I'm a natural sceptic."

Pete, who had previously collaborated with Ron on 3D action adventure game *Kingsley's Adventure*, agreed that motion control was the way to progress and not just because of the instant appeal of players seeing their own image on screen. "Simple motions were what we could do well and do most robustly," he explains. "That was one of the mantras. This has



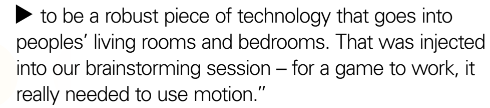






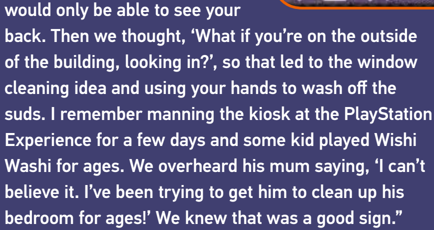
» *EyeToy* had its first public showing in the UK at the PlayStation Experience, held in London in 2003, and it soon became clear all sorts of gamers and non-gamers wanted to try it.





WHEN KEN'S CLEANING WINDOWS

With its instantly understandable concept and jolly George Formby theme tune, Wishi Washi was a highlight of *Play*'s roster and not just because the name is a nod to the brilliant and surreal minigame collection *Bishi Bashi Special*, a firm favourite with the EyeToy team. "The initial idea came from the arcade game *Rampage*," remembers Pete, rather surprisingly. "It was a joint effort by Eric and I. We talked about a game based on you using your legs and arms to climb up a building but then we realised you would only be able to see your back. Then we thought, 'What if you're on the outside of the building, looking in?', so that led to the window cleaning idea and using your hands to wash off the suds. I remember manning the kiosk at the PlayStation Experience for a few days and some kid played Wishi Washi for ages. We overheard his mum saying, 'I can't believe it. I've been trying to get him to clean up his bedroom for ages!' We knew that was a good sign."



"That was the game that really won over Ken Kutaragi," smiles Eric, who recalls the time the 'father of the PlayStation' got his soap on. "We were showing it at E3 and Phil Harrison brought Ken in to see it. We had these big yellow sponges as props to play Wishi Washi and someone put one in Ken's hand and said, 'Okay, clean the window'. He was like, 'What?' There was a fantastic moment as he did the first swipe, the suds cleared and he could see his face. He looked over to his assistant and was like, 'What is this?!' We had the head of PlayStation playing our game and he was obviously impressed. You know you have something when that happens. The cost of developing and manufacturing the camera itself added an extra level of overhead to the project, but there were enough people at Sony who thought it was worth taking a risk on. When Chris Deering, the president at the time, upped the initial European camera order, someone asked him if it was a risk. He replied, 'Yes but we've taken bigger!'"



to be a robust piece of technology that goes into peoples' living rooms and bedrooms. That was injected into our brainstorming session – for a game to work, it really needed to use motion."

So after toying with the idea of creating a virtual pet experience, the team focussed on a party game collection. It brainstormed ideas for simple, motion-driven minigames which would eventually evolve into the dozen that comprised *EyeToy: Play*. And what a diverse bunch they were. Kung Foo had you performing your best Bruce Lee impression as you swatted attacking ninjas away with your fists of fury. Keep Ups turned you into a football show-off as you used your head, shoulders and a little Maradona-style 'hand of god' to keep the ball aloft and Plate Spinner recreated the Generation Game for a new generation as you desperately tried to keep your crockery intact.

"The more people saw it, the more everyone realised how accessible it was," smiles Pete. "During the prototyping, you still used the controller for the menu screens and stuff, but we decided we should get rid of it. We went through a period of rapid iteration and trial and error, seeing if an idea would actually work using very basic graphics and if it did, it was a keeper. Once we had a few strong ideas, like Kung Foo and Keep Ups, and we saw the reaction we got from people, we became more and more confident."

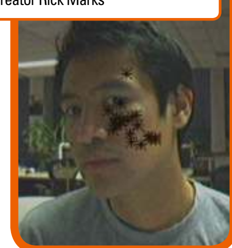


» [PS2]We always enjoyed singing along to Wishi Washi – ukulele not in hand…

> **"EyeToy was really cool and quite magical but we had no idea if anyone would buy it"**
> Eric Matthews

Soon players were triggering a fireworks display in Rocket Rumble, a homage to early PS2 title *Fantasvision*, and tickling spirits away in Ghost Catcher. Boxing Chump was an early favourite, an entertaining reimaging of those Rock 'Em Sock 'Em Robots from the Sixties, though as much fun as clocking a mechanical monkey clearly was, it could be frustrating when your well-timed punches apparently passed painlessly through your opponent. "We were fully aware it was imprecise," admits Pete. "It was a constant battle. That whole robustness thing – trying

» Ron playing around with the original 'asterisks as spiders' demo produced by Eyetoy creator Rick Marks







GROOVE 2003

■ Released soon after Eyetoy debuted, this developed the *Play* minigame Beat Freak into a fully-fledged, hand-jiving wig-out with sweep moves, two-player dance battles, a calorie counter and a surprisingly diverse track listing. We never tire of freestyling to The Cheeky Girls.



to make it as accurate as we could but being robust enough so if the lighting changed it could still work… like, if someone opened a window in their bedroom, a dark scene would suddenly become whited out and we had to be aware of all those technical issues. There was a trade-off between accuracy and what would work in the real world. That was always a consideration and also drove the ideas for the games themselves."

With the focus on easy-to-grasp minigames, some of the team understandably worried that seasoned gamers would find the experience too shallow, yet the upside of this was the possibility of tapping into a hitherto overlooked audience – the extended family of those established gamers. In these pre-Wii days, the idea of getting your mum, little sister or even your granny playing along was still quite revolutionary and the concept of engaging those new to gaming was beautifully illustrated in the opening tutorial video for *EyeToy: Play*, which starred a grey-haired grandma getting groovy with the technology.

"That was Phil Harrison's idea," smiles Pete. "He did lots of flying across to the States and Virgin Airlines had this really cool preflight video, telling you the safety stuff, and he got them to do it. It was supposed to show you that setting up and using EyeToy was so easy, even your granny can do it!"

EyeToy: Play certainly embraced the new, both in terms of audience and in rethinking what a console title could offer. As well as the 12 mingames, there was Play Room, which allowed players to mess about with various filters and see themselves submerged underwater or streaming rainbows from their fingertips. There was even an affectionate nod to Rick Marks' initial onstage demo of the technology as you fought off an onslaught of spiders. Also included was the ability to record short video messages to the PS2's memory card and share them with other users, a decade before Vine turned the six-second video into a 21st century art form. Given many EyeToy cameras were located in bedrooms, did Pete ever worry over-excited users might create 'adult content'?

"Porn never occurred to me," protests Pete. "I was thinking of the privacy side of things, though, and how people might feel about having a camera on top of their TV looking into their home. That's why we had the big red light on when it was active. It's funny because now people have cameras everywhere."

Play was certainly on the cusp of a change in the way we interact with consoles and technology in general. The film *Minority Report*, released

» [PS2] An early prototype of what would eventually evolve into Air Guitar, part of *Play 2*.


» Look what we won, mum! Left to right: Ron, Eric and Pete at the BAFTA awards ceremony



SEGA: SUPERSTARS 2004

■ Sega invited its roster of heroes to the EyeToy party which means you can strut your funky stuff along with *Space Channel 5*'s Ulala and guide monkeys in balls by judicious waving. Highlights include a clever take on *Puyo Pop* and the 'look, I'm a plane!' silliness of *NiGHTS*.



PLAY 2 2004

■ Another dozen minigames and a heap of bonus games made this an entertaining follow up to the original. Of note are the forays into sport and music, with Homerun and Air Guitar working especially well, and SpyToy, which turned your EyeToy into a security camera.



ANTIGRAV 2004

■ Produced by Harmonix, better known for its excellent music games like *Amplitude* and *Guitar Hero*, this mixes the flying skateboard concept from *Back To The Future* with *WipEout*-style racing. It's often frustrating, but when it works it does feel exhilaratingly futuristic.



PLAY 3 2005

■ The final of the EyeToy's *Play* compilations is our favourite. Four player split-screen gaming cannot fail to raise a smile, particularly when you're breathlessly competing in the athletics challenge or vying for the affections of a very fickle-looking cat.

EVOLUTION OF CONSOLE CAMERAS









GAME BOY CAMERA

■ Many gamers first messed around with taking photos using their console via this prescient plug-in. Captured images could be incorporated into some games, meaning you could play ball with your own head, or use them as cute stickers by using the Game Boy Printer.

DREAMEYE

■ The main claim to fame for Sega's webcam add-on is it being the first camera for a console that was not a handheld. As it was only released in Japan and, aside from some minigames, was only really utilised in *Jet Set Radio*, and it's likely that's all you'll ever need to know about it.

PLAYSTATION EYE

■ Sony upgraded the specs for its successor to EyeToy and a decent selection of PS3 games made use of its improved features, such as *SingStar*, *LittleBigPlanet* and *The Eye of Judgement*. It was also used in conjunction with the Move motion controllers, released in 2010.

KINECT

■ Microsoft's answer to EyeToy endeavoured to capture whole body movements and explored the idea of using gestures to control all aspects of your Xbox experience. The bundled *Kinect Adventures* was great fun as long as your game room was the size of a squash court.

▶ while the project was in development, had made us all dream of a future where we controlled super computers with a wave of our hands and the growing proliferation of webcams and broadband connectivity hinted at the FaceTime and 'selfie' era to come. In hindsight, the EyeToy can be viewed as deftly tapping into the zeitgeist, a cheap and accessible gadget perfectly suited to a generation falling in love with seeing its own image on screen.

"I know you can look back and say that but we weren't thinking it at the time," explains Eric Matthews, the design manager on the project, with a degree of admirable honesty. "We didn't know if anyone was going to play this thing or even who exactly we were aiming it at. It was really cool and quite magical and different but at the same time, we had no idea what we were going to do with it or who was going to buy it… if anyone."



» A wheelchair-using granny and her grandson enjoy *EyeToy* at the PlayStation Experience in 2003 – a moment Ron will always treasure.

"I remember seeing a kid and his disabled gran playing EyeToy together at the PlayStation Experience and I took a photo"

Ron Festejo

Eric, who had been in the games business since the Eighties and was one of the founding members of the Bitmap Brothers, admits to being sceptical, at least initially, about whether EyeToy would find an audience but he was at least clear about which game ideas should be pursued. Together with Ron, he came up with criteria to determine whether a prototype would be progressed or jettisoned, and encouraged everyone in the London studio to draw a quick sketch of any game concepts on a single sheet of paper. "We would score ideas on things like, 'Does it use the video feed? Does it make you the star of the game? Is it social? Is it as much fun to watch as to play? Does it encourage movement?' We'd go through the game ideas and rate them and that decided if they went in. And we were trying to offer something unique, so if we thought we could play it better on a traditional controller, then it wasn't going in."

Eric, after lengthy discussions with Ron and Phil, encouraged the team to move away from traditional game mores, such as complicated scoring systems and unlocking levels through dogged determination. The latter decision, to allow all the minigames to be playable from the start, so incensed some team members that they went so far as to ask for their names to be removed from the credits, which seems something of an overreaction in retrospect. But then this was new territory and Eric explains it wasn't really until the PlayStation Experience show in the summer of 2003 that the team had an inkling of what the general public would make of their work. "We took three prototypes – Wishi Washi, Boxing Chump





» [PS2] The team initially experimented with colour-tracking before opting for the more reliable motion-detection.



PLAYSTATION CAMERA

The latest iteration of Sony's camera for the PS4 is a key component of PS VR. It tracks the LED lights in the virtual reality headset to determine movement and thus can detect exactly when you lose it and start crying during a particularly traumatic section of *Resident Evil 7*.

and Dance Floor, which became Beat Freak. I was there with the head of marketing, Simon Rutter, standing at the back, looking at these lines and lines of people queueing up to play them, saying, 'This is crazy!' We thought we had something unique but we never imagined we'd have that many people… and so many different people – mum, dad, grandma, the kids. We were thinking, 'This could do less than a 100,000 units or over a million', we just didn't know."

As it turned out, *EyeToy: Play* sold over 4 million copies and the camera went on to shift more than 12 million units in the following five years, spawning over 20 dedicated EyeToy titles. Many more games utilised its innovative features and its critical and commercial success had a lasting effect on how Sony, as well as their competitors, viewed the potential audience for their games – and how they might be played. "It was quite an important game to have worked on," reflects Eric. "Making something that the whole family could play, from really young kids to grandparents, something they could play together, seeing that enjoyment and knowing you'd done something quite unique."

Pete, who together with Eric currently works with Sony's VR tech, agrees that EyeToy was the first step on an exciting new road. "There's a definite link with what I do now and what we were experimenting with back then," he says. "Those early demos Rick showed with colour-tracking and the work we did on the wand idea, you can see that in the Move controllers that came later and right up to PS VR. Of course it's a lot more advanced now and there's a lot more data coming in and out but it does trace back to EyeToy."

As for Ron, he recalls the project with fondness. After *EyeToy: Play* collected two BAFTAs, including the Technical Achievement award, he took them home to show his mother. "I was always into games and spent a lot of time in my room playing them when I was young," he says. "I had left school at the age of 15 without really knowing what I wanted to do. All these things worried my mother, who was the only parent I had, and she tried to convince me to continue with my education. It was important for me to show her what I had a hand in doing and that it was recognised in a real way. She's been proud of me ever since."

EyeToy: Play was not just a source of pride for the Festejo family. Sony has continued to develop camera tech, right up to the current PS4's PlayStation Camera. Its venture into developing novel devices for which EyeToy spearheaded can not only be seen in Move and PS VR but also the hugely successful *SingStar* series and the child-friendly Wonderbook project. Sony's rivals clearly took note, too. Microsoft's Kinect owes the EyeToy a debt and though Nintendo's Wii tends to get all the credit for bringing motion control to the masses, remember that *EyeToy: Play 3*, released a year before the Wii, included a bowling game and *Kinetic* beat *Wii Fit* to the yoga mat by two years.

Reaching a new audience and making gaming accessible to all is something Ron recalls with obvious pleasure. "I remember seeing a kid and his disabled gran playing EyeToy together at the PlayStation Experience and I took a photo," he says. "It was truly special for me to capture that moment. It's the moment you hear of from all types of creators. The moment when all the late nights and stress was absolutely worth it." *

Thanks to Ron, Pete and Eric for their stories and photographs.



» EyeToy received excellent support from Sony in Japan, as this flamboyant showing illustrates.



» [PS2] Ghost Catcher required tickling spirits into submission. We never saw that in *The Exorcist*.

APPLE OF SONY'S EYE

Phil Harrison on bringing the EyeToy to market

Sony's then-executive vice president remembers working with the EyeToy well, and saw it as a chance for Sony to branch out into something new. "I wanted to expand the audience for computer entertainment beyond the traditional core players, and EyeToy was a chance to remove the controller from the gameplay equation," he remembers. "I had seen what happens when you pass a console game controller to a non-gamer – they react as if they'd been given a hand-grenade with the pin already taken out. EyeToy was a chance to create new gameplay experiences that would never be possible with a standard controller and the team did an amazing job in running with that vision. I've heard so many great stories over the years about how a gamer's non-gaming friends or family had so much fun playing EyeToy. Without its success, there wouldn't have been a *SingStar* or a *Buzz* – or possibly even a PlayStation VR, if you join all the dots."

Future Classic

Modern games you'll still be playing in years to come

retro GAMER
THE WITCHER 3 WILD HUNT
IN THIS ISSUE OF RETRO GAMER
SINCLAIR ZX80
WARIO
JOHN GIBSON
MYSTICAL NINJA

Info

- » **Featured System:** PC
- » **Year:** 2015
- » **Publisher/Developer:** CD Projekt Red
- » **Key People:** Konrad Tomaszkiewicz, Marcin Blacha, Mateusz Kanik

Go Deeper

- » Geralt's beard grows in real time, meaning you'll have to check in at the barbers every now and again if you want to keep your hero clean shaven.
- » An ice skating combat mode was tested for the game, but was ultimately dropped. Probably for the best.



» [PS4] Geralt enjoys a fiery sunset before heading off in search for his missing ward.

THE WITCHER III: WILD HUNT

How CD Project Red found its feet on its third attempt at making an RPG that would stand side by side with genre titans, and how it managed to surpass that goal and made a game that's nothing short of a classic

Words by Paul Walker-Emig

THE BACKGROUND

The mutant monster-slaying hero that we now know as the protagonist of *The Witcher* series, Geralt of Rivia, was created by the Polish writer Andrzej Sapkowski. His countrymen at CD Projekt Red's first attempt at a videogame adaptation of Sapkowski's *Witcher* novels was released in 2007 and was followed by *The Witcher II: Assassins of Kings* in 2011. You can find many of the elements that would eventually make the third game in the series a monster hit in both titles, but neither quite found the right formula. It's not that the games were terribly received, but they were not universally praised and certainly not up to the level the studio would come to reach in terms of storytelling, technical sophistication or polish, as it did with the third entry.

When it came to developing *The Witcher III*, CDPR went all in, taking the lessons from making the first two games and backing its new title with a bigger budget that reflected an increase in ambition. In the lead up to release, the studio was making the kind of bold claims that the videogame marketing machine generates for new titles, but it turned out the studio wasn't bluffing.

THE GAME

The Witcher III is an epic tale about Geralt's quest to track down his missing adopted daughter, Ciri, and save her from a mysterious, mythical force called the Wild Hunt. Using Geralt's two swords – a steel one for normal enemies and a silver blade for slaying monsters – in combination with magical abilities granted to him by virtue of his Witcher training, you battle your way across the land, completing quests for the many characters you meet on the way and upgrading Geralt's equipment and abilities as you go. The epic nature of the game's tale is reflected in the gobsmacking scale of its world. You begin the game in an area called White Orchard and inevitably make the mistake of thinking it's pretty big. Then you realise it's basically the tutorial area. A speck of dust on a colossal map that stretches from the swamps and forests of Velen, to the bustling cobbled streets of the northern city of Novigrad, to the haggard, windswept Skellige isles. Traversing these varied regions on your trusty steed, Roach, is a pleasure. You'll witness glorious sunsets as you trot down winding mountain



» [Xbox One] Geralt has a dance-like fighting style that encourages you to pirouette out of the way of attacks and swing your sword with precise timing.

» [Xbox One] You'll start to learn what creatures to expect in what locales. Drowners, for example, are often found by water.

> "The game does a fantastic job of building up to the boss encounters"

Things of note

TOUGH CHOICES



The Witcher III is filled with choices that change how stories play out. Often, the consequences of your actions aren't revealed until long after the fact, to great effect.

MORAL COMPLEXITY



The game tries to reflect the messy complexity of real life in its storylines, rather than taking simple black and white moral positions.

COMPELLING QUESTS



The carefully designed quests and compelling stories that accompany them are one of the keys to the game's success, and will keep you playing for ages.

A STRONG HAND



The *Witcher III*'s strategic in-game card game, Gwent, was so popular with fans that it's now got its own spin-off. The standalone game expands on the minigame's ruleset and strategies.

SOUND OF SUCCESS



Accomplished voice acting and a fantastic soundtrack, performed by the Brandenburg State Orchestra, add a great deal to the overall experience.

paths, see dramatic grey skies while stalking wild, witch-infested woods, the forests thick fauna swaying in icy wind and thunderous rain.

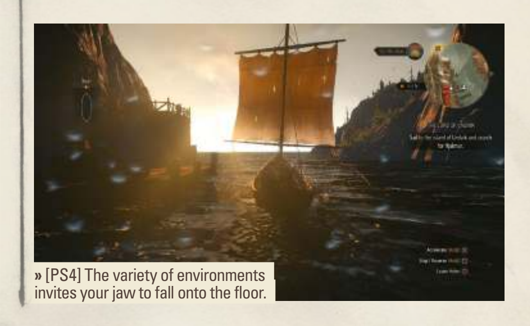
Of course, scale and visual flare is not enough to make a true classic. *The Witcher III* shines in the detail that fills its vast spaces. What makes its wild lands a pleasure to explore, alongside the game's beauty, is the adventure you find there. The rich tales of spooks haunting the ruins told by terrified villagers, the chance encounters with an intriguing new character that drag you off on unexpected paths and make you forget where you were heading in the first place. *The Witcher III* is filled with these tantalising threads for those inclined to pull on them and they'll always unravel to reveal something worthwhile.

At the core of all of this is the stories. No quest in this game is an afterthought. Each one has a tale attached that makes it interesting to follow. They'll be informed by real-life folklore, function as psychological fables, tie into people's personal problems and reveal complex relationships, give you pause to think about how events like war impact on those at the bottom of the social ladder. This means that you never feel like you're doing a fetch quest; you are following a story to its conclusion instead.

Finally, there are the monster hunts. The game does a fantastic job of building up to these de facto boss encounters, requiring you to draw on all of the game's RPG systems to be successful. You often have to do a bit of detective work to get information on the monster, scouring an area with Geralt's Witcher senses to track the beast or talking to NPCs for information. You can brew healing potions and oils, specialised for your chosen target, to apply to your sword using the plants you've gathered. Then, when you finally confront your foe, you have to use the parries, dodges and magic 'Signs' you've been mastering throughout the course of the game to outmanoeuvre your enemy and take it down with your blade. The slow build that leads to the battle only makes it more satisfying when you finally vanquish a fearsome Griffin or a grotesque Necrophage and take their head as your trophy.

WHY IT'S A FUTURE CLASSIC

RPGs are often associated with numbers – chasing experience points to unlock new skills and become more powerful, playing with equipment sets to balance power and speed, collecting the number of items you need to craft an item or brew a potion, and so on. You can find all of that in this game too. However, *The Witcher III* never forgets that RPGs aren't just about numbers. They are about adventure. In crafting a world full stunning locations, engaging characters and carefully crafted stories, *The Witcher III* makes you forget about the numbers. You're not taking contracts on monsters or veering off the beaten path to investigate something that's caught your eye to chase the next level-up, or because you'll get a bit of treasure at the end of it (though you will get that too). You're doing it for sheer thrill of the adventure itself. You're doing it for the stories. That is what ensures that *The Witcher III* will be remembered as one of the genre's defining games. *



» [PS4] The variety of environments invites your jaw to fall onto the floor.

Minority Report

INTERESTING GAMES YOU'VE NEVER PLAYED

ATARI 8-BIT

While we typically feature obscure games here, we also feature more popular titles on systems that we rarely cover. As a result here is a selection of classic games for Atari's 8-bit range of computers that you really should look at tracking down

Words by Paul Davies



ZYBEX

■ DEVELOPER: **ZEPPELIN SOFTWARE** ■ YEAR: **1988**

■ Released by budget software house Zeppelin, *Zybex* had its work cut out for it to compete with the current crop of shooters that were around at the time. *R-Type*, which had recently been ported to the Spectrum, and *Salamander* on the C64 were both receiving high praise, so the Atari had to do something to compete; *Zybex* did just that.

Zybex is a beautiful looking game with its crisp, bright, colourful sprites and detail; with even the start screen and its metallic-like reflections having you just wanting to wait a few more seconds before you press start. Playing the role of an escaped convict avoiding execution, your mission is to collect tokens from the end level bosses to move on to the next.

You move and fly with the aid of a jet pack and are armed with a singular gun, though this is not all what it seems. Firstly, the game has an autofire system which lets you concentrate on your movements without the added difficulty of timing your shots – the fire button is used to switch between various weapons, which you can collect throughout each level. You start with a simple shooter, the Orbiter, but as you progress you can upgrade the power level of your gun by collecting power-ups. There are also four extra weapons to collect in the shape of an eight-way Shooter, Rail Gun, Pulse Rifle and Wall Gun. These won't look much until you start to upgrade sufficiently – then you can start to do some real damage.

What is different here from many games of the same genre is that you can choose which level you want to take on next. When enough tokens are collected, you can choose to move on to levels of double digits if you're brave enough. There's also a two-player option which means you can play simultaneously with a friend, which is not only fun but can also come in handy when faced with difficult sections in the game.

The game for the majority of the time has a lot going on with there always being enemies to destroy, many of which shoot back, and scenery to be avoided meaning you will always find yourself needing to move, which adds an extra pace to the game. Each level has its share of very interesting and original-looking enemies which move around the screen in a plethora of ways; from spinning, bouncing, swirling and to just heading straight at you, your ability to manoeuvre is seriously put to the test so you better get practicing if you want to get out alive.



» [Atari 800] We really hope that statue doesn't come alive at any point…

With regards to sound effects, there isn't a lot going on but where the game comes into its own is the music; which can only be described as a work of art. Brilliantly composed by Adam Gilmore, this really has to be listened to all the way through to the end. It takes you on a journey, from its simplistic start followed by its bouncing bassline it then just springs to life – it's jaw-dropping stuff.

A budget release, but one with the looks and game design of the heavy-hitters at the time. *Zybex* is a brilliant example of just what the Atari 800 was capable of.

IF YOU LIKE THIS TRY...

R-TYPE

ZX SPECTRUM



■ The envy of all others shooters for the Speccy. An arcade port that had people both scratching their heads and being amazed at the same time. With its beautiful looks, slick animation and vast, varied weaponry, be prepared to lose many hours as you fight the Bydo Empire. *R-Type* on Spectru is quite simply a marvel.

GRADIUS

NES



■ A shoot-'em-up that has gone down as one of the best arcade conversions for the NES - play it for a minute or so and you will see why. A fast-moving, frenzied and colourful coin-op conversion that is up there with one of the best for the platform, and with a killer soundtrack, too.

X-OUT

ZX SPECTRUM



■ *X-Out* is one shoot-'em-up that's a little different to the rest; as in it's set underwater, though that doesn't stop the enemies coming at you any slower. With the ability to upgrade your craft at the end of each level, *X-Out* adds that little extra which makes it a bit special in the shoot-'em-up stakes.

IN DEPTH





WEAPON POWER LEVEL

■ Shows the level of power for the weapon selected with four being the highest – the current status is at full power for this selected gun.

WEAPON SELECTION

■ A display of all the weapons you're carrying in your armoury. An icon flashes to show which is being used.

CURRENT WEAPON

■ Displays the name of the weapon that is in use. Currently being used here is the Orbiter, the original gun you are armed with at the start of your adventure.

NUMBER OF LIVES

■ Your available lives are displayed here. Extra lives are collectable throughout the game and appear similar to weapon icons.

1P 002400 4 ORBIT 2P 000

2P 000000 5 ORBIT



NINJA

■ PUBLISHER: **MASTERTRONIC** ■ YEAR: **1986**

■ **In essence, *Ninja* is a simple game.** You move from one screen to another defeating opponent after opponent, but it is one you will find yourself coming back to over and over. The annoyingly, but catchy, theme tune may be one of the reasons why, but it's also challenging enough to keep you gripped. From the satisfying crunching noises during combat to the flinging of shuriken at your opponent, *Ninja* also has fun and entertaining elements too.

Your mission is to infiltrate a Japanese fortress, taking on the numerous enemies that are lying in wait for you as you progress, while collecting the flashing idols which are placed randomly around the rooms. The enemies that are waiting for you have various levels of skill, with the other Ninjas being the more difficult to overcome, as opposed to the rather ordinary-named Thugs, many of which take little effort to take down. The Karateka will put up a much tougher fight though with the help of shuriken and daggers which can be found on the ground, these can make your life a little easier as decisive use of such weapons can take down enemies instantly.

As you delve deeper into the fortress, you'll find multiple enemies per room to defeat and having to take them all on at one time. This, coupled with the fact that they can also collect and use projectiles, can make for some tricky situations and can call on you to find other ways out, including running away, but if you feel you have the skills and courage, it's really quite fun to get in there and take them all on. Incorporating the best ninjutsu skills, from flying kicks to swordplay, this game has all you need to keep your inner ninja satisfied.



» [Atari 800] When there's a hero vs thug fight, there's usually only one winner. Let's hope that doesn't change.

» [Atari 800] Two against one – hang on, that hardly seems like a fair matchup!

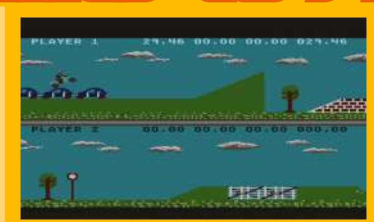
MORE GAMES TO PLAY



» 180

■ DEVELOPER: **MASTERTRONIC**
■ YEAR: **1986**

■ This is one of the great sport sims – from the challenge of controlling your players' hand as you aim around the dartboard, to the clenching of your teeth as you watch and hope your opponent is going to miss that double nineteen to snatch victory. With a great theme tune, humorous opponent names and digitised speech should you hit the score of the games' title, this one has everything, and all for the price of a pint.



» KIKSTART

■ DEVELOPER: **MASTERTRONIC**
■ YEAR: **1986**

■ From manoeuvring jumps over giant potholes to leaping over rows of cars, *Kikstart* provided everything for stunt bike-loving adrenaline junkies everywhere. Speed and timing is key here as one slight wrong move will send your character flying across the screen, so a lot of practice will be needed. If the thought of even trying this in real life scares you too much, *Kikstart* allows you to do it without ever leaving the house.



» PANTHER

■ DEVELOPER: **SCULPTURED SOFTWARE**
■ YEAR: **1987**

■ Saving hostages is the name of the game here with the aid of your rather odd looking aircraft; in your way are multiple flying saucers out to take you down and leave them trapped forever. Hostages wave frantically encouraging you to save them but you do so at the risk of being blown to pieces. This moving shooter is impressive with its isometric views, frantic shooting and a rescue element thrown in to complete the package.



» MR ROBOT AND HIS ROBOT FACTORY

■ DEVELOPER: **DATAMOST**
■ YEAR: **1983**

■ If you're a fan of platformers and robots then you can't go far wrong with this one. It's similar in style to *Miner 2049er* but with added finesse in terms of looks and features. Conveyor belts, ladders and collapsing platforms add to the challenge as Mr Robot goes about his task. The game also features a level editor for you to get your creative juices going – a great extra that adds longevity.

ATTACK OF THE MUTANT CAMELS

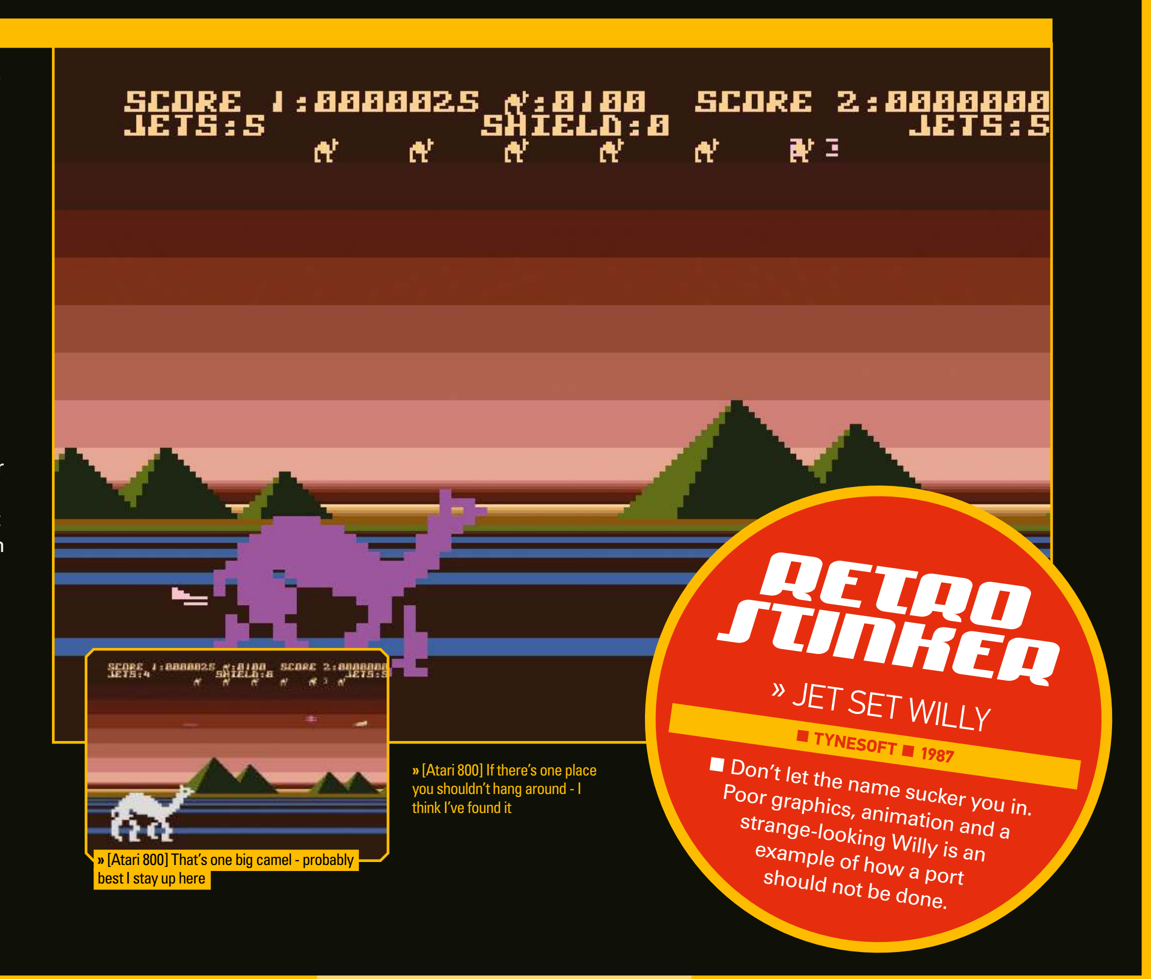
■ PUBLISHER: LLAMASOFT ■ YEAR: 1983

■ Don't let the title put you off as this is one of Jeff Minter's best, and having only been released elsewhere on the Commodore 64, Atari owners were very privileged indeed.

Attack Of The Mutant Camels puts you in control of a fighter jet which has the unenviable task of taking down several giant mutant camels before they reach your base. A laser gun is used by your jet to take the camels down but to make things a little harder, these camels fight back. We all know how domestic camels spit in anger but these being the mutant variety, you'll find their spit is a little more lethal. Shooting fireballs at you from their mouths will cause quite an inconvenience, as you try to manoeuvre your craft to attack these giant foes.

It's a pretty looking game but don't let that fool you – this one is more than just a little on the tricky side. Your jet controls take a good while to master and though the camels may look pretty slow moving, you'll find they are really hard work to take out which takes a lot of time and all the while they'll be making up a lot of ground very quickly which only adds to the difficulty. There really is no time to hang around here.

If you're up for a serious challenge, you can't go far wrong with attacking some camels; but only mutant ones. And only the ones in this game, it must be stressed.



» [Atari 800] If there's one place you shouldn't hang around - I think I've found it

» [Atari 800] That's one big camel - probably best I stay up here

RETRO STINKER

» JET SET WILLY

■ TYNESOFT ■ 1987

■ Don't let the name sucker you in. Poor graphics, animation and a strange-looking Willy is an example of how a port should not be done.



» HOVER BOVVER

■ DEVELOPER: LLAMASOFT
■ YEAR: 1983

■ *Hover Bovver* was the original and first of its type; while you may think that maybe you may not be interested in a lawn-mowing simulation, this one had the added offbeat humour that you would expect from Llamasoft. Angry dogs with their irate owners, only added to the fun (and tension) as you aim to cut your grass without having your ankles bitten off. That will make you think twice before 'borrowing' someone's lawnmower next time.



» MINER 2049ER

■ DEVELOPER: BIG FIVE SOFTWARE
■ YEAR: 1982

■ Named as the inspiration behind *Manic Miner, Miner 2049er* has quite the heritage. Taking control of Bounty Bob, you make your way around various platforms collecting pickaxes, jewels and the odd cup of tea as you attempt to make it to the next room. Avoiding enemies adds to the challenge here as well as avoiding big falls which ultimately lead you to losing a life – very Miner Willy-esque in more than one sense.



» ROCKFORD

■ DEVELOPER: ICON DESIGN
■ YEAR: 1987

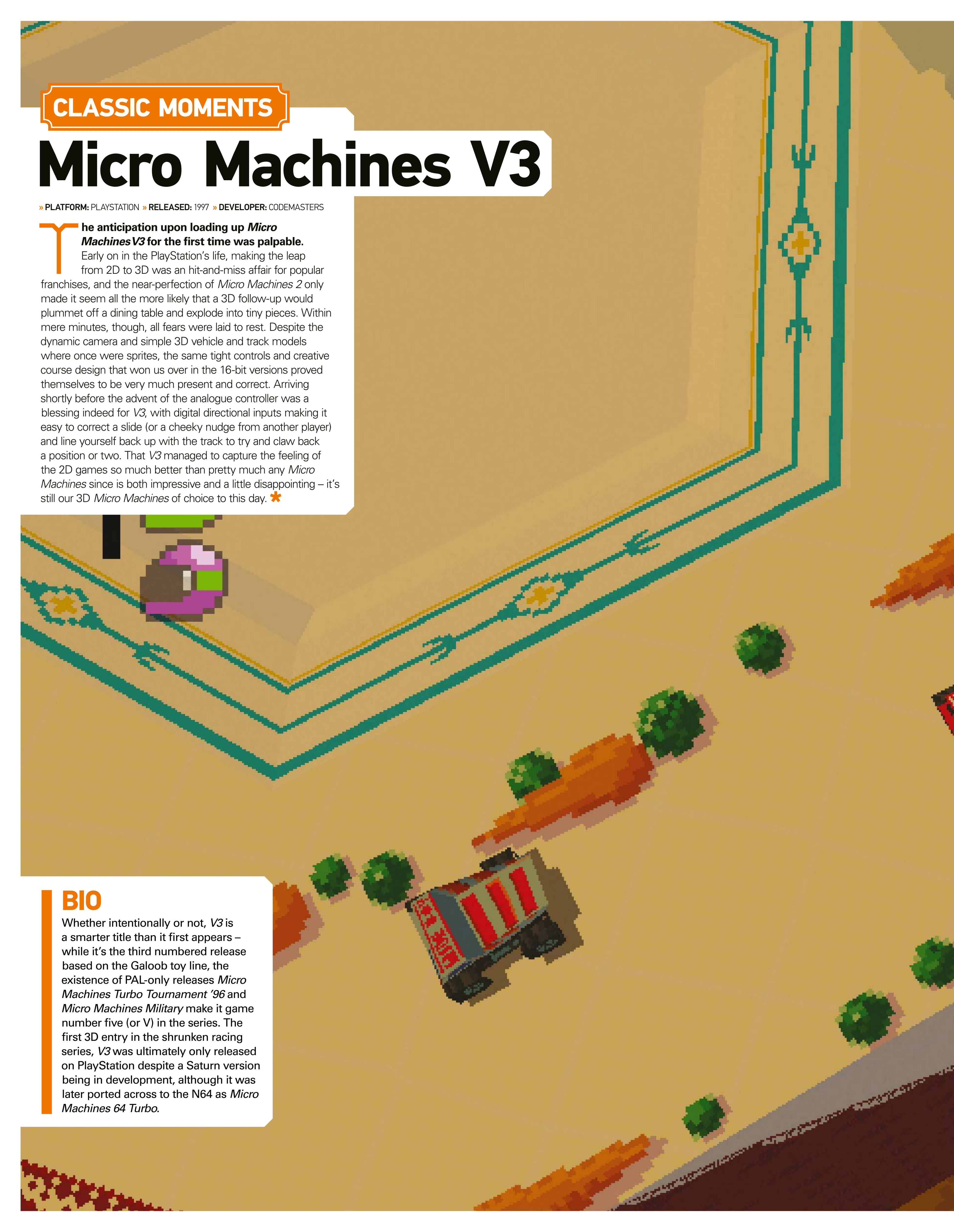
■ Part of the *Boulder Dash* series and named after the protagonist of the original, *Rockford* has more rock dodging and gem grabbing fun. It also has more level variations and the added element of underground monsters chasing you should you be unfortunate enough to let one out – as if avoiding falling rocks wasn't hard enough – this will keep you as hooked as the original. You'll be giving this 'just one more go' until well past your tea time.



» HENRY'S HOUSE

■ DEVELOPER: MASTERTRONIC
■ YEAR: 1987

■ After playing about in his father's lab, Henry has shrunk himself to a height of six inches. He then has to escape, but there are many obstacles in his path. Stamping shoes, dripping taps and giant toothbrushes are all out to get the plucky hero as he makes his way through each level, attempting to find the key to make his escape. *Henry's House* is a joy to play and as great a platformer as you're likely to find on an 8-bit system.



CLASSIC MOMENTS

Micro Machines V3

» **PLATFORM:** PLAYSTATION » **RELEASED:** 1997 » **DEVELOPER:** CODEMASTERS

The anticipation upon loading up *Micro Machines V3* for the first time was palpable. Early on in the PlayStation's life, making the leap from 2D to 3D was an hit-and-miss affair for popular franchises, and the near-perfection of *Micro Machines 2* only made it seem all the more likely that a 3D follow-up would plummet off a dining table and explode into tiny pieces. Within mere minutes, though, all fears were laid to rest. Despite the dynamic camera and simple 3D vehicle and track models where once were sprites, the same tight controls and creative course design that won us over in the 16-bit versions proved themselves to be very much present and correct. Arriving shortly before the advent of the analogue controller was a blessing indeed for *V3*, with digital directional inputs making it easy to correct a slide (or a cheeky nudge from another player) and line yourself back up with the track to try and claw back a position or two. That *V3* managed to capture the feeling of the 2D games so much better than pretty much any *Micro Machines* since is both impressive and a little disappointing – it's still our 3D *Micro Machines* of choice to this day. *

BIO

Whether intentionally or not, *V3* is a smarter title than it first appears – while it's the third numbered release based on the Galoob toy line, the existence of PAL-only releases *Micro Machines Turbo Tournament '96* and *Micro Machines Military* make it game number five (or V) in the series. The first 3D entry in the shrunken racing series, *V3* was ultimately only released on PlayStation despite a Saturn version being in development, although it was later ported across to the N64 as *Micro Machines 64 Turbo*.

MORE CLASSIC MICRO MACHINES V3 MOMENTS

Get The Prize

Race wins award special prize cars, with any duplicates earned slightly increasing the stats of the owned vehicle. This ties into a special competitive multiplayer mode where you can put one of your beloved toys on the line in the hopes of winning one wagered by your opponent. Consider yourself a master of pretending to race pretend toy cars around pretend places? Then put your mini where your mouth is and see who walks away with the goods.

Peas And Cues

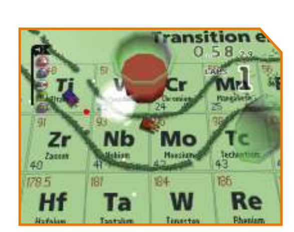
V3 returns to a number of iconic locations from the 2D *Micro Machines* games, with great new courses in familiar settings like the pool table, breakfast table, and back garden. Each springs to life brilliantly in 3D, packed with tiny details that you'd likely miss while speeding past obstacles, but the knockout nature of the game means you should occasionally have a little downtime in which to take in the sights. And plot your revenge.

A Virtual Playset

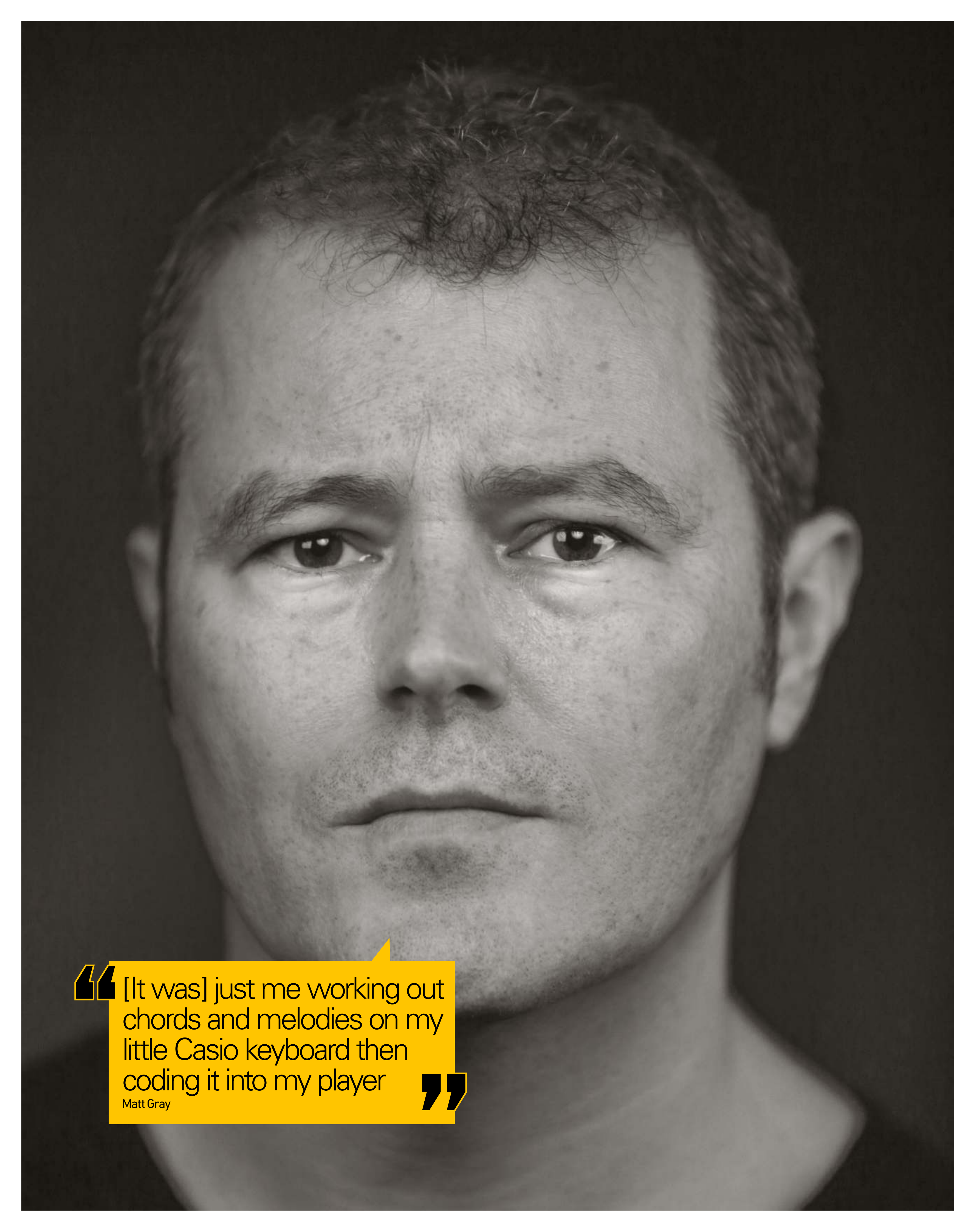


The menus in *V3* are among the most playful you'll ever witness, with a tiny toy car playing the part of a cursor of sorts and navigating options laid out to form a city-like road layout not unlike the actual Micro Machines playsets many of us enjoyed as kids. Convenience is not forgotten, either – a handy Bypass option lets you jump straight back into the last played mode in case you'd rather not navigate the winding roads each time.

Bring The Boom



After speeding around in tiny sports cars, your first thought might be that doing the same thing in trundling tanks wouldn't be anywhere near as satisfying. But with functioning cannons on these bad boys, there's a shift to a more methodical and tactical kind of combat racing – do you risk slowing down to line up a direct hit on the race leader, or sit with the pack so nobody gets blown up? It's tense, and a single well-placed shot can make or break a race.



“[It was] just me working out chords and melodies on my little Casio keyboard then coding it into my player”

Matt Gray



MATT GRAY

His Commodore 64 career lasted just three years, but Matt Gray worked on some well-loved games. We speak to Matt about his time in games and how he ended up in pop music

Words by Andrew Fisher

Rewind to 1986 and a young Matt Gray spends his days as an office clerk, writing music on the C64 by night. Those early demos were uploaded to Compunet and eventually netted him his first job in the industry. During the Nineties Matt's career took a different turn, leading him to cofound the songwriting team Xenomania. The international hit *Believe* by Cher, famous for its electronic vocal style, was cowritten and produced by Matt Gray. Matt would then go on to work with Girls Aloud and many other stars before returning to his roots and announcing an exciting remix project known as *Reformation* that would take him back to the music he wrote in the Eighties – and back to the SID chip.

Did you have any formal musical training?
No, none. Apart from basic stuff in music class at secondary school.

When did you start using computers to make your music?
I started using a computer to make music in 1985. It was really basic ideas on the Spectrum and also the school computers. But by 1986 I was making music on the C64 using software like Electrosound, and then Soundmonitor and Rockmonitor.

Your younger brother, Lou, also made a few C64 tunes, how is he doing?
He carried on making music in his spare time. He got married and settled down and has a daughter.

Was there a particular method you used to create a tune?
Just me working out chords and melodies on my little Casio keyboard then coding it into my player. Building things up from what I could hear in my head. Sometimes just stumbling upon new sounds through experimentation. But no hard and fast rules then.

What was being on Compunet like in those early days?
In hindsight it was amazing, really. To go from being isolated in your own world making music on the C64 in your home in the middle of nowhere to suddenly being connected to people either in the games industry or trying to get into the games industry. And it was still quite a niche exclusive community because not many people were inclined to buy a modem and tie up their phone line at considerable cost really.



» [C64] Matt's musical score for *Mean Streak* doesn't actually play as it should. It still sounds nice and funky to us, though.

Did you like hearing your music used in demos?
Yes. It was great to get some validation on what I was doing, however large or small that was. I suppose it's comparable to making a social media post that takes off. That's what people are aiming for in the same respect. A little bit of validation and feedback.

How did you start working for Dalali Software?
That came directly through the Compunet community and as a result of music I'd put up or had put up in demos. They were based in Croydon which was literally 25 minutes from my town, so I went off to meet them one evening after work via a lift from my Dad, came away with my first commission and stopped off in a decent restaurant on the way home.

Is it true that the *Mean Streak* music is not played correctly?
That is true unfortunately. The modulation routines





either were not coded or simply didn't work. I'd written it on another player but it needed to be a much more streamlined bit of code to work in the game. I hadn't made enough headway with my own player at that stage so the coders at Dalali imported my tune into their own code. I've recently found the original version I submitted so I may put that out there at some point.

Did you enjoy working on *Yogi Bear*?
Whilst it wasn't really the kind of music I was hoping to be making, I just treated it as a bit of fun really. You have to do that occasionally, especially in remixing. Some of the bigger fees I've had have been for the naffest projects. But Yogi was fine. No problem.

Your tune for *Driller* is memorable and epic. How long did it take to create?
Took several weeks on and off. *The Great Storm* in October 1987 curtailed it for well over a week as we had no power during that time. But it was mainly a smooth production process. No creative brick walls on that one at all.

There was a problem with the *Driller* music being played too fast…
Yes, which I didn't become aware of for many years. I actually prefer the faster version these days, but I know others think the slower one is better.



» [C64] The stylish *Dual Cassette II* demo from Ash & Dave featured a Matt Gray tune.

What events led to the *Quedex* commission from Thalamus?
That came about through Compunet. I had done some demos with Paul 'Dokk' Docherty and Graham Hunter, and one of the tracks came to Paul Cooper's attention as Dokk was doing the loading screen for *Quedex*. They used my track in its Soundmonitor format for the loader and asked me to do the in-game tracks and sound FX too. So shortly after Paul Cooper and Stavros Fasoulas drove to my home and Stavros uploaded his work in progress on my C64 and we discussed the music and FX. If I'd have been more PR savvy I'd have taken some photos of the meeting.

Your next Thalamus game was *Hunter's Moon*. Did you work closely with Martin Walker, who went on to write music himself?
More closely than most developers. I spoke to Martin a fair amount on the phone about the music and the game. I knew he was interested in developing his own music player when he had time, so I figured that would be the last Martin Walker game I'd be providing music for. But it went well and the game was a good success.

Was it difficult to make a living?
Well I was only part-time at this stage. I still had my office clerk wages and was working on music at night and weekends. If I had have been full-time it would have been a volatile wage vehicle.

Did you have problems getting paid or credited?
Getting paid freelance was very haphazard then, still is. The only times I was completely left out of pocket were towards the end of the C64 era with so many firms going into liquidation. Musicians were at the back of the queue when the receivers came in. Credit-wise it was mostly okay, though I was miffed I didn't get a credit for my music on a little NES game called *Micro Machines*. And the missing small royalty I'd agreed. Probably missed a tidy sum there.

What prompted you to create your own music routine, and what made it different?
I basically needed to code my own routine to have any chance of a career in games music at that time. If you couldn't adapt your code as required then you were not going to be much use to developers. I suppose my routine was different in that I approached the modulation routines differently to others. I think we all did. Your routine is almost like your personalised instrument. If I was starting it now, I'd probably have invested more time in even more mod routines and ideas, but it is what it is and did me fine.



» [C64] Until this interview, Matt was unaware that 4 Soccer Simulators had reused his *Professional BMX Simulator* music.

A call from Mark Cale at System 3 saw you write music for *Bangkok Knights*. Was this a big break?
It was. 1987 was drawing to a close, I was bored in my day job and I'd had a quick run of commissions and wanted to take the leap into full-time self-employment. *BK* was a real baptism of fire. One of those moments where you either grab the bull by the horns or capitulate with fear. I had just a few days to turn it around and luckily I hit the ground running and had the bulk of it done within a day or two. The success of it led directly to the offer of working on all of System 3's games for at least the next 12 months and their next game they needed a lot of music for was *Last Ninja 2*.

***Last Ninja 2* drew on a wide range of influences, including Tangerine Dream and Bomb the Bass. Did you come up with the ideas yourself or in collaboration with the team?**
Whilst I went to meetings and discussed things with

MAGIC FROM MATT

Five great games with Matt's memorable music



LAST NINJA 2
■ The legend continued, transplanting the last of the Ninja clan to modern-day New York as he continued to fight the evil shogun Kunitoki. Influences on Matt's 13 tunes included Tangerine Dream and *Beat Dis* by Bomb The Bass, creating a memorable and fitting soundtrack.



QUEDEX
■ The *Quest For Ultimate Dexterity* was the third Stavros Fasoulas game for Thalamus. Known as *Mindroll* in the US, players took control of a grey sphere and travelled through ten diverse 'planes'. Matt's superb soundtrack was designed to fit smoothly around the sound effects.



DRILLER
■ The first *Freescape* game may move at a plodding pace on 8-bit systems, but the solid 3D graphics still impress. Matt's epic and memorable tune really adds to the atmosphere as the player explores the gas-filled moon Mitral and beams in drilling rigs to stop the impeding explosion.



MAZE MANIA
■ A lesser-known Hewson release, the player must flip over all the tiles in the huge mazes to the same colour. Enemies drain energy but power-ups can be picked up to help you overcome them. Matt's fantastic soundtrack includes a cover of Charles Deenen's *Maze Mania* theme for the Amiga.



HUNTER'S MOON
■ A clever mix of shoot-'em-up and puzzle game, this innovative Martin Walker title featured 128 levels that 'build' themselves and some unique sounds. Although Martin would go on to write music himself, it is Matt who provides four great pieces including the rhythmic title tune.



> “I basically needed to code my own routine to have any chance of a career in games”
> Matt Gray

» [C64] *Dominator* wasn't the greatest of C64 shooters, but it did feature an excellent soundtrack.

the team at System 3, I went with what I wanted to hear. We discussed not doing clichéd Oriental tracks, but in the end I just went with what came out.

What was it like to work on an iconic game we are still talking about 30 years later?
At the time it was great to be working on a sequel to such a success, but I wasn't aware that it would have such an impact as it did. I probably read two or three reviews of it after release, just to see what was said about the music, but I don't remember any fireworks if the music was mentioned. I certainly was not aware of the effect the soundtrack had on so many gamers of the era. It was a slow-moving world back then. Information didn't travel very fast or at all pre-internet.

Were there any games you really wanted to produce the music for, but never got the chance to do so?
Well, if things had moved quicker I'm sure I would have done *Last Ninja 3*. Basically, directly after *LN2* I was twiddling my thumbs for several months doing conversions for Out Run and *After Burner* that were never used. It was only later in 1988 that I started on *Tusker* and then *Dominator* early 1989. I remember being quite frustrated in the summer of 1988 with nothing to get my teeth into. *LN2* had been completed between late January and May. I'd have preferred something original to work on, but had to wait until September for *Tusker*. So, yes if we had not have parted ways in March 1989 I'd have liked to have done *LN3*. But hey, the Maniacs Of Noise had arrived on the scene and Reyn Ouwehand's work on *LN3* was ace.

Several budget release games from Codemasters are in your back catalogue. What were they like to work for?
Codemasters were really great to work for. David and Richard Darling had been very helpful to me since I met them at the Olympia Computer show. I know I was impressed by their rapid success and they kept in contact until I was finally able to produce something for them with *Fruit Machine Simulator*. Literally a one-evening job, but it led to other jobs from them such as

COMPUNET ID: MG12

How Matt made an impact on the shareware scene



Compunet was a pioneering bulletin board system designed for the C64 with Commodore providing the modem, each with a unique ID and software to connect via phone line to the server. It had many features that we recognise today – electronic mail, paying for content, live chat rooms and a voting system (with the trolls frequently voting 1/10). There was also a special version of Richard Bartleby's *MUD* (learn more about that in issue 178). Users were able to upload their own content in the form of pages. This was how many demos, pictures and pieces of music were spread in the early days of the scene. Many creative people got noticed on Compunet before going on to long careers in the games industry. Graphic artist Stephen Robertson (SIR on Compunet) uploaded his bitmaps to the network before joining Argonaut, recently working at Rockstar on the *Grand Theft Auto* games. Matt Gray (MG12) uploaded several pieces of music, including his Jukebox 64 tunes remixing other musicians' work, and wrote music for the Exclusive Demo from Pixel Developments. Many demos relied on ripped music, extracted from the newest games, and thus Matt is credited in many demos from that era.





SELECTED TIMELINE

GAMES

- **MEAN STREAK** [1987] C64
- **YOGI BEAR** [1987] C64
- **DRILLER** [1987] C64
- **QUEDEX** [1987] C64
- **BANGKOK KNIGHTS LOADING TUNE** [1987] C64
- **HUNTER'S MOON** [1987] C64
- **FRUIT MACHINE SIMULATOR** [1987] C64
- **LAST NINJA II – BACK WITH A VENGEANCE** [1988] C64
- **POGO STICK OLYMPICS** [1988] C64
- **HYPERION 2** [1988] C64 (UNRELEASED)
- **4 SOCCER SIMULATORS** [1989] C64
- **BMX FREESTYLE** [1989] C64
- **BMX SIMULATOR II** [1989] C64
- **DOMINATOR** [1989] C64
- **KGB SUPERSPY** [1989] C64
- **MAZE MANIA** [1989] C64
- **MOTO X SIMULATOR** [1989] C64
- **TREASURE ISLAND DIZZY** [1989] C64/NES
- **TUSKER** [1989] C64
- **VENDETTA** [1990] C64
- **DELIVERANCE – STORMLORD 2** [1990] C64
- **MICRO MACHINES** [1991] NES (UNCREDITED)
- **HUNTER'S MOON REMASTERED** [2018] C64

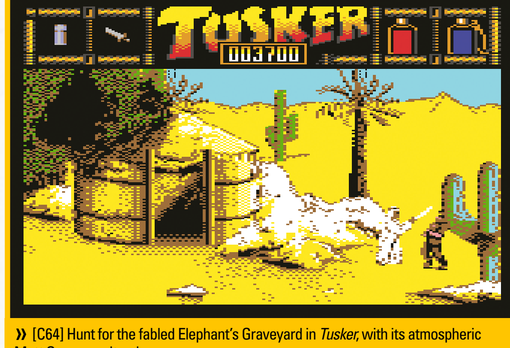
Pro BMX and later in 1989/1990 to the NES games *Micro Machines* and *Treasure Island Dizzy* (also C64). They had a great setup in Banbury in a converted farm and, in hindsight, I was foolish to turn down a full-time job there – partly because I didn't want to move 100 miles from where I was. They had a great working environment mixing work and play. Obviously they went on to be a massive company before they all sold up. But, yes I liked them and really admired their approach and success.

Deliverance was your last SID tune, what made you stop?
Well, apart from it being a commission that fell under a receivership process before I could get paid, it was also looking like the C64 was losing its market share. And by now, I was getting into dance music production and trying to look towards record producing.

What were the toughest deadlines that you had to work with?
Some were 'we need it tomorrow' or in three days. *Bangkok Knights* loader was probably the toughest as I knew it was a big opportunity. Like getting called up for England at a day's notice, maybe?

Did you – and do you still – play a lot of videogames yourself?
I used to but once I started making the music, not so much. I'm a bad games player really.

After working on the Commodore 64 music scene for a while, did ever you consider moving over to the Amiga?
Yes, but I was strangely put off by the change in sound chip and language. I wanted the SID to go hand in hand with the new machine, but it didn't and that put me off. A lack of enthusiasm for learning new code and making the new player, and a lack of faith in the industry. When companies around you are going bust, it's very easy at the time to think the whole thing was just a passing fad. Never been more wrong in my life about that.



» [C64] Hunt for the fabled Elephant's Graveyard in *Tusker*, with its atmospheric Matt Gray soundtrack.

How did you go from computer games to songwriting team Xenomania?
I had started making dance music and having some small success on the underground scene putting out my own tracks. Then I got some remix commissions from Deconstruction Records, who wanted to sign an EP I'd had a *Cool Cuts* number one with called *Fantasise/The Slam*. So I'd started working out of a local studio with the guy who owned it, Steve who'd played with Billy Ocean. We made some other tracks together and started a group Motiv8, for which I came up with the name. One of our tracks was called *Rockin' For Myself* which we did in several versions, but by 1994 I had be spending so much time at his studio I wasn't really earning any money. I was skint and had to take a full-time job, which meant I was spending less time working on music at the studio. But after a year or so working with other record companies and publishers I eventually returned to Motiv8 to help with remixing which had really taken off. And by then Steve was working with a guy I had met briefly a year or two before, which was Brian Higgins. We seemed to hit it off and gradually Steve turned up less and less leaving us to do all the work. Brian had decided to start up on his own and decided to leave – and shortly after that I joined him over in his new studio which became Xenomania in spring 1996.

How many of the stars that Xenomania wrote for did you meet?
Most of them, apart from the ones they worked with during periods I was not there. I've recorded and worked with too many stars to list really but apart from Girls Aloud and Sugababes, there were Kylie, Pet Shop Boys, Dannii Minogue, Alesha Dixon, Holly Valance and Natalie Imbruglia. In more recent times I worked with new up and coming stars such as MNEK who is doing really well now with several hits under his belt. And he is a lovely easy guy to work with. Just a big variety of artists really, from long established ones such as Phil Oakey and Edwyn Starr to the latest signings. You could bump into any number of famous people in that place. In one room could be a member of Girls Aloud and in another could be Franz Ferdinand, or even the legend, Johnny Marr.

Recently you have attended some retro events in the UK. How has it been coming face to face with your fans?
Yes, it's been great to meet fans from all over the world. It's also been great to finally meet the likes of Rob Hubbard and Ben Daglish at these events. [It has been] really interesting talking with those guys.



» [C64] The late John Ferrari wrote both *Moto X Simulator* and *BMX Freestyle* – featuring Matt's music – for Codemasters.



» [C64] Released on Codemasters Gold label, the enhanced *Professional BMX Simulator*.



» [C64] *Driller* may have moved at a glacial pace, but Matt's music enhanced things no end.

What prompted the *Reformation* remix album?
I'd been pondering the idea for almost a year. Chris Abbott had suggested it was something people would like to hear, but initially I was fairly full-on in the studio with pop tracks. Fast-forward a year and I had more time available and I thought if I don't do it now, I never will. So we just cracked on with it.

Has the Kickstarter been difficult?
It's difficult in that if you think about the sheer amount of work to do, sometimes it can almost overwhelm you. And because it really does take months of work you go through different states of mind and personal life stuff. I naturally hate the winter and it hates me back. So I find it can get tough going during those months. The spring is always great for productivity, I find. But I guess it's different for everyone.

One stretch goal was writing new SID tunes. How has it been going back to three voices?
It's been tougher than I thought. In my heyday I was desperate to get my hands on better sounds and synths, so to me the SID was a stepping stone. So going back to it now feels a bit like going back to school or back to your first job. It's interesting at first but eventually you come back to why you moved on first time around. But I'm pleased with the new SID tunes for the album and I've done a few others for the The64 project and also the *Hunter's Moon* 30th Anniversary project for Thalamus. It's just taken much longer than I would have taken 30 years ago.

With the second *Reformation* album you are remixing more of other peoples' tunes – what's that like?
That's been really good. I did a few remixes for a bonus CD on the first album and I really enjoyed it. In some ways it's easier because I'm not attached to the track in the same way I am for my own stuff. It's been cool adding in ideas and sections to tracks I grew up with and loved.

What persuaded you to take part in *Hunter's Moon Remastered* (huntersmoongame.co.uk) for the C64, from the relaunched Thalamus Digital?
They asked me. That's the short answer. But also because they were adding in new levels and an intro so it was a chance to add to the soundtrack.

How do you view the development of computer music, from hardware chips to orchestral performance?
I've got a huge preference for electronic music or hybrid electronic/organic live sounds. The orchestral stuff is very cinematic but often I find they are very generic. John WIlliams, the Bernsteins, Thomas Newman, etc, they all have a style and they know the importance of melody. I love orchestral music in movies and games, but I think it has far too much dominance these days. I grew up listening to amazing electronic soundtracks in movies but it seems to have been swamped now by orchestral by the numbers soundtracks. But that's the mass public for you.

Would you be interested in writing music for games today?
Well I have done several in the last couple of years, but as I say there isn't a big demand for electronic music it seems. At least not my style. But I'm always open to offers of work.

How would you sum up your long career in videogame music?
Successful, but perhaps short-lived. It took decades for me to learn that I actually had a fanbase. It's good to be back doing music I don't have to worry about being radio-friendly. It's back to being naturally creative rather than trying to fit into a certain box. *

YOU ASK THE QUESTIONS

Matt remixes your own queries into answers

DRS: Do you see the C64 as an 'instrument' in its own right?

Yes, well certainly the SID chip. It's a decent tool.

CRUSTY STARFISH: Who is the best C64 musician in your opinion, and the single most stand-out tune you've heard on the C64 to date?

It's always tough to split Rob Hubbard and Martin Galway because they are quite different but equally talented. Rob edges it for me with his sheer versatility. Whatever he does, he makes it sound good. As for best tune, it's a close call between *Rambo First Blood Part II* loader and *Sanxion* loader – both exceptional classics.

MAYHEM: Are there any tracks you look back and think 'yeah, I would have done that differently'?

Yes, I added in sections to many of the remakes [for the Reformation project]. The Basement track now has a totally new second half as it sounded unfinished to me for a long time after.

NORTHWAY: Is it easier to make a 'mood' SID where you don't have drums, and have you wished for 'just one more channel' a lot?

Possibly, but the mood still has to be effective. I prefer to work with drums if possible, but sometimes they are not really needed. Galway didn't use them very much as I recall, usually implying rhythm with bass or chord movements. I think the restriction made me think about the track more. I used samples as a fourth channel for one or two tracks, but I never really liked my samples. Except for the Rockmonitor demos I did – having proper drums on that was cool.


2
Ace



Super Sidekicks

TEN OF THEM, TO BE PRECISE

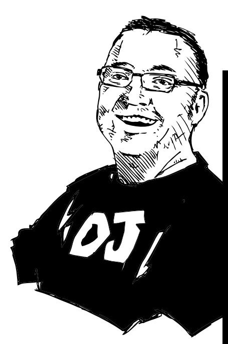
» RETROREVIVAL

» NEO-GEO » SNK » 1993

Everyone knows that the Neo-Geo has a bunch of great fighting games, but one of the things that the system doesn't get enough credit for is its range of sports games – right from *Baseball Stars* at launch, they were an important part of the platform's success. In Europe and South America, few of them had more of an impact than the *Super Sidekicks* series.

Super Sidekicks isn't really a game for the football purist. It's pretty lax on rules and nothing short of criminal assault will attract the referee's attention, while the kit choices seem to indicate that England is seemingly represented by Newcastle United. But as a slice of competitive arcade action, it's hard to beat. The game is always an end-to-end affair, in part because of the ferocity and frequency of tackles, and simply because the game is so fast. The arcade presentation practically encourages trash talk too, thanks to the full-screen celebrations which take place after each goal.

But as it turns out, there's something about the name which happens to be true: the vast majority of your team are sidekicks, as each team has a designated 'ace' who runs faster, shoots harder and generally carries his practically useless buddies to victory. As such, tactical play tends to go out of the window – you're often best served passing the ball to him whenever you want to make a shot, as he's the most likely to succeed. So much for team spirit, eh? *



>> This month we check out Sega's latest Mega Drive compilation, take to the streets with Raging Justice and discover if there's a pretty good game under Fox N Forests' pretty good visuals





DARRAN
Sega Mega Drive Classics
It's not as perfect as I'd like, but it hasn't stopped me from wasting a silly amount of time on Sega's new compilation.



NICK
Hyper Sentinel
I've been waiting to pick up a good Switch shooter for a while, and this provides big explosions in short bursts – ideal for the bus!



» [PS4] The scanlines look great. Here's hoping they're added to the fullscreen version of the games.

Sega Mega Drive Classics

BLAST PROCESSING HITS THE CURRENT CONSOLES

INFORMATION

- » **FEATURED SYSTEM:** PS4
- » **ALSO AVAILABLE ON:** XBOX ONE
- » **RELEASED:** OUT NOW
- » **PRICE:** £24.99
- » **PUBLISHER:** SEGA
- » **PLAYERS:** 1-2

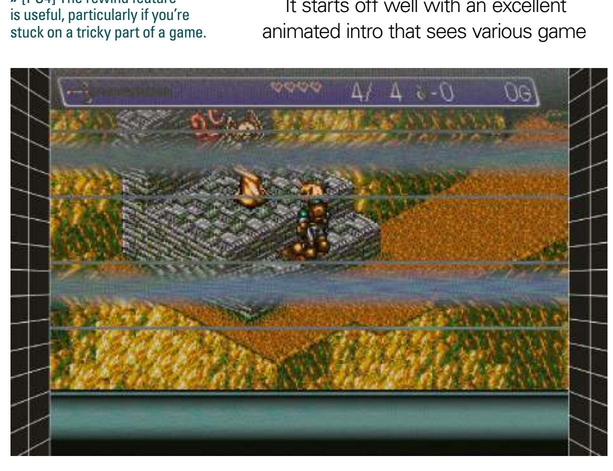
When it comes to Mega Drive emulation inconsistent is perhaps the best word to sum up Sega's official output. Its 3DS ports have been absolutely phenomenal, offering endless emulation options and being virtually indistinguishable from the real thing, *Sega Forever* on iOS, however has been more disappointing (although numerous updates have made a big difference to it). So where does Sega's latest effort lay? Somewhere between them if we're honest.

It starts off well with an excellent animated intro that sees various game characters rushing around the screen in order to form a Mega Drive. The presentation is good as well, with the setting for the compilation featuring the same virtual room that the earlier PC version uses. You can go over to nearby shelves and choose from the 52 available games, play certain games online, check scoreboards, compete in challenges and even play on a virtual TV, rather than play with a full screen.

Playing in fullscreen mode gives you the option of choosing from various funky borders or simply stretching the image to fill a widescreen TV (something we wouldn't recommend) there are also several filters you can use and the ability to add scanlines. Interestingly, the scanlines don't currently work when you play fullscreen but they do on the PC version, so we'd imagine this should get fixed via an update. While the presentation of *Sega Mega Drive Classics* is great, the emulation itself isn't quite as good.

The Mega Drive's sound chip always seems to cause issues for coders and it's no different here. For the most part, it's fine and many will be hard-pressed to tell the difference, but every now and then we did notice an odd stutter and the occasional hissing and popping on certain pieces of music. Considering

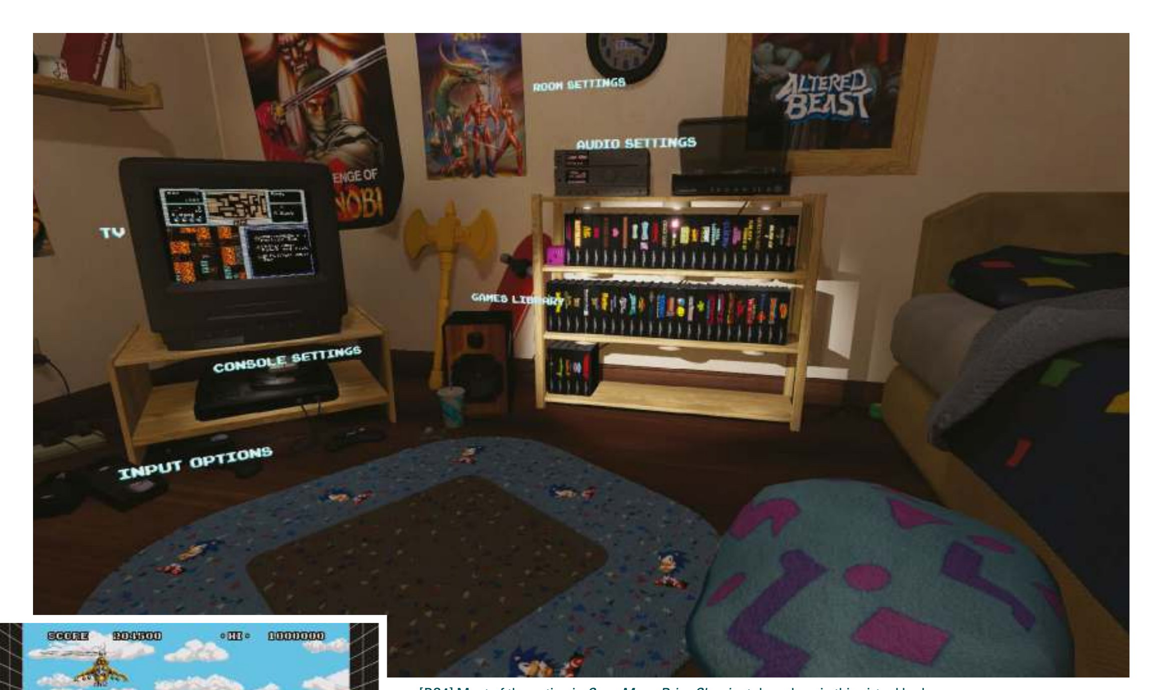
» [PS4] The rewind feature is useful, particularly if you're stuck on a tricky part of a game.





BRIEF HISTORY

» Sega's Mega Drive was originally released in October 1988 and proved to be a substantial upgrade over Sega's earlier 8-bit home consoles. It was a big success for Sega in the west (even outselling the SNES at one point) and eventually went on to sell over 30 million units.



» [PS4] Most of the action in *Sega Mega Drive Classics* takes place in this virtual bedroom.

» [PS4] Some games have aged better than others. *Super Thunder Blade* is one of the weaker offerings.

how excellent M2's 3DS offerings are, it's disappointing that the same quality hasn't been achieved here.

Another issue we've noticed is input lag. It's only a couple of frames at most and for many it won't be noticeable at all (it certainly hasn't ruined our enjoyment of the games) but it is there and, like the C64 Mini, it could become more of an issue depending on your TV. Interestingly, we didn't notice any on the PC version that's already available, so we're confident it can be fixed. It's still disappointing, but thankfully, there's plenty about the new compilation that Sega does get right.

For starters that range of games is largely excellent and covers virtually all of the big hitters that Sega released or published on the system. *Sonic 3* and the *Ecco* games are bafflingly absent, but you've otherwise got the cream of Sega's Mega Drive output and most genres are represented meaning that no matter your gaming tastes, you should find plenty of games to enjoy. There's a distinct lack of racing games (most likely due to licences) but many of Sega's arcade conversions of the time are here, as well as the vast majority of Treasure's output. This is particularly interesting as the likes of *Alien Soldier* not only pushed the Mega Drive to its limits, but are now insanely expensive to buy, which further adds to the value of Sega's compilation.

Of course, with so many games included it's inevitable that a few duffers feature, but in general the quality is high, with weak links, including the likes of *Space Harrier 2*, *Super Thunder Blade, Virtua Fighter 2* and *Fatal Labyrinth*.

Sega has also been paying attention to other compilations and Mega Drive Classics also features a cool challenge mode, which is similar to the one found on the magnificent *Rare Replay*. There are 20 challenges and they range from finishing the second stage of *Streets Of Rage II* without picking anything up to collecting all 123 photons found on the second stage of *Vector Man 2*. They vary in difficulty challenge, from easy to ridiculous, but they should still take you a good time to get through.

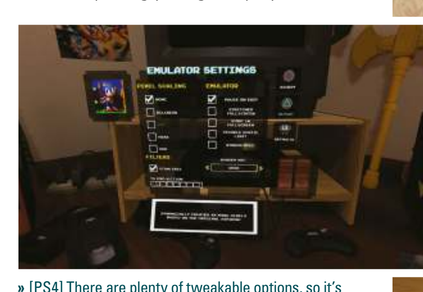
Other additions that Sega have included are four save points for each game (highly useful for the many included RPGs) the ability to fast forward or rewind, as well as an interesting mirror image mode that effectively flips the games and makes them surprisingly tough to play. There's also the option to switch regions as well, meaning you can play the uncut version of *Bare Knuckle 3,* although not all games include this neat little option.

It's certainly not perfect, but *Sega Mega Drive Classics* still manages to represent great value for money due to the sheer quality of games that are included. The niggling emulation issues are a shame, particularly when placed up against the M2 3DS games, but it shouldn't stop you from enjoying some of the finest games to ever grace Sega's 16-bit console. ✱

In a nutshell

There are some annoying emulation issues, but there's no denying the sheer quality of the vast majority of included games and the many extras Sega has added. A good effort that should certainly please fans of the classic console.

>> Score **80%**



» [PS4] There are plenty of tweakable options, so it's a shame the emulation isn't as perfect as we'd like.

✱ TEAM PICKS

Our picks of the best the Collection has to offer



ALIEN SOLDIER

» I've long since come to peace with the fact I can never justify a physical copy of this. Thankfully, this is a far cheaper option and it still holds up incredibly well (if only I wasn't so poor at it).



STREETS OF RAGE II

» I resent that this collection, at the time of writing this at least, has input lag issues. However, it's not really noticeable in *Streets Of Rage II* because it's generally a slower-paced game, so that's something!



PHANTASY STAR IV

» You don't have to worry about frame-perfect timing with this RPG, and it's one of the best Mega Drive games. Given the current price of original cartridges, this represents a nice cheap way to experience a classic quest.



✱ PICK OF THE MONTH

Hyper Sentinel

» **System:** Switch (tested), PS4, Xbox One, PC **»** **Buy it from:** Online **»** **Buy it for:** £11.99

It's not hard to see where the inspiration for *Hyper Sentinel* came from – publisher Huey Games is the latest venture from Andrew and Rob Hewson, and there's more than a touch of *Uridium* about Four5Six's new shoot-'em-up. Your goal is to charge up and down the length of a huge spaceship, taking out targets on its surface while avoiding fire from both flying enemies and gun emplacements. Once you've smashed all of those, a guardian will appear for you to fight before you can move on to the next level. While you're doing all of this, you'll pick up power-ups (including some neatly inventive ones, like a spinning mace) and build up a score multiplier based on constantly hitting enemy targets. If you're low on energy, you can recharge it by avoiding being hit for a while.

Initially it's all a bit bewildering – the pace is pretty fast, obstacles aren't always immediately apparent and the visual effects are drawn from the Jeff Minter school of psychedelic delights. However, you soon start to see that there's a method to the madness, with visual highlights for ground targets you haven't yet taken out and life bars for the guardians. It all comes together quite nicely once you've spent a bit of time with it, and you'll soon be racking up some crazy scores. However, it's worth noting that some of the guardian designs feel very tough to effectively strategise against – there was one early one in particular which employs a hit-and-run approach that feels almost impossible to avoid colliding with.

There's plenty of content to indulge in, too. Beyond the various levels, there are three difficulty settings and additional Survival and Boss modes. Some players will also take great joy in hunting down the medals, little achievements specific to each stage, or using the retro computer graphical filters. We can't help but feel that the design could have used a little more tweaking (particularly when it comes to the bosses), but with Eighties-style blasters so rare today, *Hyper Sentinel* should definitely find some fans.

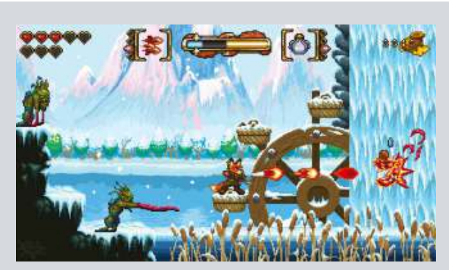
 Score **79%**



» [Switch] These big lasers are quite useful in the end of stage fights against the guardians.



» [Switch] This power-up gives you a triple converging shot – great for mid-range enemies.



Fox N Forests

» **System:** PS4 (tested), Xbox One, Switch, PC
» **Buy it from:** Online **»** **Buy it for:** £15.99

This platform game puts you in charge of Rick, who is out to grab treasure and restore the guardian tree. He's armed with a sword and magic arrows, as well as the unique ability to change seasons at will – freezing rivers with winter to create platforms, or using an autumn wind to blow enemies away.

The pixel art of *Fox N Forests* is beautiful and the soundtrack is excellent. However, the inability to use arrows while jumping is a frustration. What's more, the levels are few in number, so the game requires you to replay previously-beaten levels to look for new items. This becomes a chore because the levels are often long enough to outstay their welcome – a shame, given that the core platforming is enjoyable.

 Score **62%**



Raging Justice

» **System:** Switch (tested), PC, PS4, Xbox One
» **Buy it from:** Online **»** **Buy it for:** £9.99

It's a brave developer that attempts to release a new scrolling fighter. The genre has fallen out of favour in recent years, so it's pleasing to see titles like *Raging Justice* and the excellent *Wulverblade* make an appearance.

Makingames' debut certainly isn't perfect, but it is fun, drawing inspiration from the likes of *Streets Of Rage* and *Final Fight*, whilst bringing along its own ideas. One example are arrests, which can be pulled off instead of killing someone. While a neat touch, they become difficult to pull off when enemies are close together. Other cool touches include the ability to ride various vehicles and neat challenges at the start of each stage, which give *Raging Justice* some much-needed longevity.

 Score **68%**



Hyrule Warriors: Definitive Edition

» **System:** Switch **»** **Buy it from:** Online, retail
» **Buy it for:** £49.99

We were impressed with *Hyrule Warriors* when we first played it on Wii U and it's lost none of its impact from its move to Switch.

This *Definitive Edition* features numerous performance tweaks (including 60 fps when docked) a local two-player mode and gameplay adjustments, while also adding the Wii U's bonus DLC. The game itself is great fun, being styled on the popular *Dynasty Warrior* games that feature heroes laying waste to numerous enemies with over-the-top attacks. There's also a huge amount of content, including the seemingly endless Adventure Mode. All told, Hyrule Warriors is a great celebration of all things *Zelda*, and will keep you entertained for ages.

 Score **85%**



» [Master System] *Getting Galactic Revenge* on a large, bullet-spitting robot.

» [Intellivision] Princess Lydie stomps on her enemies from a great height.

» [Master System] We're about to get three gems in a row with *Gemitas*.

GOT THE POWER

The Master System regularly sees homebrew love courtesy of the SMS Power forum and its regular development competitions, the most recent of which has resulted in some very interesting and polished games. For example, there's *Duckslayer Adventures* which is a conversion of the classic *Adventure* from the Atari 2600. The developer has written his own story to explain the beefed up versions of the original's graphics – the player's avatar is a square because he's a sentient gelatinous cube called Sir Jelly and the castle guardians are a couple of Duck Dragons. The creator says they're placeholders so presumably there are further improvements on the horizon.

There are a couple of shoot-'em-up available as well. *Astroswab* is a typical gallery shooter which is similar to the classic Intellivision title *Astrosmash* except with delightful, brightly coloured graphics, but the game that really caught our attention was the superbly presented multidirectional scrolling blaster *Galactic Revenge* where the heroine, Olivia Gun, blasts her way through the aliens which have kidnapped her Master System. We also played a solid *Columns* clone with improved, larger in-game graphics called *Gemitas* – we weren't so keen on the sound with this one – and the slightly odd *Simpsons Trivia* which is, possibly unsurprisingly, a quiz about Springfield's most famous family.

Along with the coding there were also music and hacking categories, with entries for the latter including *Streets Of Rage*, *Streets Of Rage 2* and *Fatal Fury Special* which were all converted from the Game Gear to the Master System by forum user BcnAbel76 – who apparently likes the odd beat-'em-up – and another user called Revo ported the *Itchy And Scratchy Game* from the same source platform. All of the entries for this year's competition can be found in the SMS Power forums behind Kikstart.eu/sms-power-2018 along with older posts about contributions from the previous competitions.

Another event which will be running until August is the IntyBASIC competition which is specifically for programmers working in the titular BASIC variant for the Intellivision. At the time of writing, there are four entries on offer including *Deep Zone,* which is a shoot-'em-up that the developer says takes cues from classics including *Gorf,* a version of the puzzler *MazeaM* and *Princess Lydie,* a platformer where said royal has to jump on the heads of her unsuspecting enemies. Kikstart.eu/intybasic-2018 goes to the Atari Age forum area for this competition.

NEW GAMES NEEDED

If you have a homebrew project you would like to see featured then please contact us at: **darran.jones@futurenet.com**



» [Windows] 2D platforming action with a shotgun and lots of blood.

DOOM BUT CUTE

What would happen if the seminal first-person shooter *Doom* was transformed into a 2D platformer? Well, one group of developers found itself pondering that question a couple of years ago and built *Mini Doom* as a small test to find out, somehow making the hellspawn and a certain demon-slaying space marine look quite twee in the process.

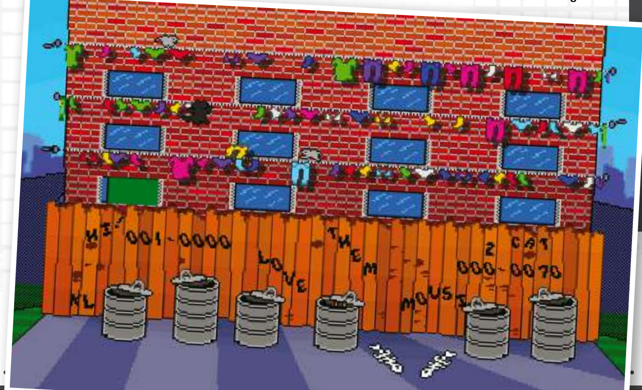
And since that project was a success there's now *Mini Doom 2* which takes the original concept and greatly expands on its feature set. Head to Mars and open the gates of hell by visiting Kikstart.eu/mini-doom-2-win.

> "With PICO-8 I've got a second chance to write retro 8-bit games"

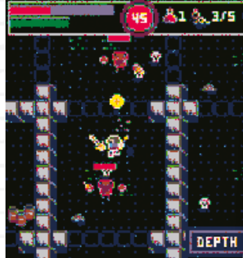
RIGHT ABOUT MEOW

***Alley Cat* on the Atari 8-bit was developed for Synapse by the late Bill Williams in 1983 and was later ported to DOS along with reworked graphics and audio.** With that in mind the author of *Alley Cat Remeow Edition* has included modes which simulate the Atari, IBM PC and PCjr and should make the game feel far more authentic.

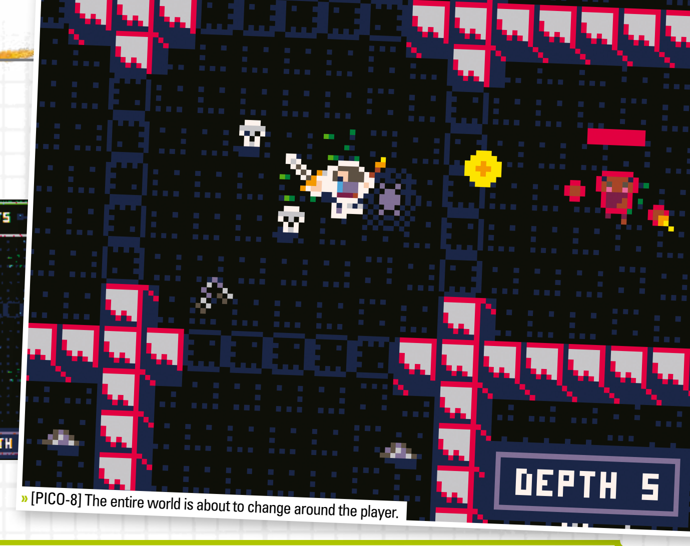
The game sees Freddy the cat climbing around the outside of an apartment building, waiting for his moment to dive through windows which in turn lead to minigames. Information can be found behind the bins at Kikstart.eu/ac-remeow-win.



» [Windows] Feline frolics while hanging from a washing line.



» [PICO-8] Trapped between two fireball-wielding creatures.



» [PICO-8] The entire world is about to change around the player.

HOMEBREW HEROES

We've recently been pondering fantasy consoles and what draws people to them – that lead to a chat with programmer Mohin Miah about his game Mazeborn and the PICO-8 fantasy system it runs on



***Mazeborn* runs on a PICO-8, can you tell our readers what that is?**

PICO-8 is a modern 8-bit fantasy retro console, very similar to a C64, but it only exists as a virtual machine on Windows/Mac – there is no hardware for it! It has all the colour, resolution, memory, sound and processing limitations of an Eighties home computer but you code for it using LUA rather than assembly language. You develop and run games in the virtual machine itself, but you can also share your games through HTML and Windows/Mac binaries.

PICO-8 was created by a company called Lexaloffle as a tool for hobbyists to easily create 8-bit games, as well as to help focus on core gameplay due to the memory and space restrictions. PICO-8 has gained a lot of popularity in the indie game jam scene due to its accessibility.



» [PICO-8] Those fencing lessons don't seem such a bad idea now.

And what initially drew you to developing on a fantasy retro console?

I rediscovered my love for old-school gaming through **Retro Gamer** and have always wanted to write my own games ever since I had an Atari 130XE, but coding assembly language was just too daunting as a kid. With PICO-8 I've got a second chance to write retro 8-bit games and reach a wider audience through the internet. I can use techniques like palette swapping and writing directly to memory without having to break a sweat, unlike writing homebrew for real consoles.

What were the inspirations for the game itself?

I wanted to demake a popular game while using contemporary game design and see how it would fare on an 8-bit console. I love games like *Dark Souls* and *Bloodborne*, so I thought I would recreate a procedurally generated C64-style version of the PS4 classic. I think I got as close to a *Souls*-like as you can get on an 8-bit machine!

How long did *Mazeborn* take to develop and who was involved?

I developed it all by myself, with help from my wife and family for playtesting. It took about two weeks overall, including the time to learn LUA, as well as looking up some old-school coding techniques on YouTube from legendary developers like Jon Burton (*Sonic 3D Blast*).

And what kind of feedback have you had so far?

I've had great feedback from people as well as requests for more content, for which I have released a bunch of updates. I've even had a let's play video created for the game by a kind YouTuber.

Can you tell us what you're currently working on?

Thanks to the success of the PICO-8 version, I'm making *Mazeborn 3D* for modern systems, in order to implement more features and reach a broader audience. I'm also developing a *Punch-Out!!* clone for the PICO-8, just to see if I can!

You'll be able to find these at Gymcrash.itch.io along with other PICO-8 games that I have made.

Gaming REVIEWS

DO YOU REMEMBER?

Although the ancient Mayans were a mysterious lot, we're not convinced that their hieroglyphs were actually meant for playing match three puzzles, but that's the premise for Maya Mystery on the Game Boy Advance where brightly coloured tiles with patterns on are shuffled into groups before disappearing. There are two game options available from the main menu; basic mode has no timer to worry about, and the game keeps running until there aren't any moves left on your screen, while time trial mode is a race against the clock to find matches, with each group removed from the playfield being worth precious extra seconds.

There aren't any frills or power-ups, but *Maya Mystery* is a delight to play and is well presented, including the surprisingly jolly piece of music which burbles away in the background. Kikstart.eu/maya-mystery-gba will take you there.



» [GBA] Free play mode, so no time pressure.



» [GBA] Waiting for a moment as gravity does its thing.

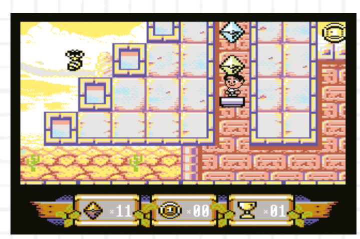




retro GAMER SIZZLER

SAM'S JOURNEY

» **PLATFORM:** COMMODORE 64 » **DEVELOPER:** PROTOVISION » **DOWNLOAD:** KIKSTART.EU/SAMS-JOURNEY-C64 » **PRICE:** FROM $23.99 FOR DIGITAL DOWNLOAD



» [C64] Sam gets a lift and grabs a few gems on the way.



» [C64] Spaceman Sam's party trick involves being fired from a cannon.

Poor little Sam was sound asleep when a sudden loud noise pulled him from his slumber. Whatever it was came from his closet and, on opening the door, he was confronted by a light just before a huge claw reached out to drag him inside. Now Sam finds himself having to journey through a strange, brightly coloured world divided into distinct areas while searching for magical doorways which will hopefully lead home.

There are a huge number of screens to work through and many secret areas – walking into an apparently solid wall will open it up to reveal the hidden part of the map – often containing useful power-ups, keys for locked doors or switches which magically alter some of the platforms. Finding and putting on a costume will give Sam special abilities, for example, dressing as a ninja allows him to climb walls while the pirate outfit comes with a handy cutlass which can be used to slice up enemies or open treasure chests.

Also found in each stage are boulders, these can be picked up and thrown to take out enemies – wearing the baseball pitcher's uniform gives the ability to throw with more power and accuracy – or to crack open chests and, with some careful searching of the map, Sam can optionally locate and collect gems, trophies or coins which make up a significant slice of the percentage score awarded at the end of each area. Locating all of these items may require a little lateral thinking and possibly a change of clothes so it's good that he can return to an area once it's been passed.

Sam's Journey is one of the most technically impressive C64 games that we've seen, pushing what the hardware can do to the point where it wasn't possible to do on a stock NTSC-compatible machine so a RAM expansion is required to help with the scrolling backgrounds. Along with being impressive it's also fun to play and the sheer scale of Sam's quest should keep anyone who enjoys platformers busy for a long time.

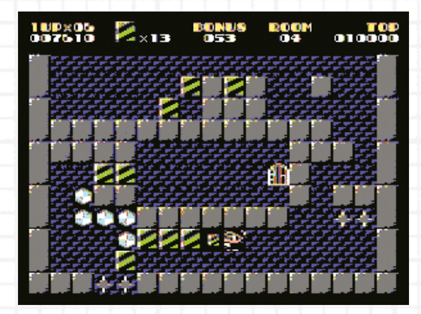
>> Score **97%**

Don't forget to follow us online for all the latest retro updates

 RetroGamerUK  @RetroGamer_Mag  darran.jones@futurenet.com

MAGIC BLOCKS

» **PLATFORM:** COMMODORE PLUS/4 AND 128
» **DEVELOPER:** ROLAND KUNZ » **PRICE:** FREE
» **DOWNLOAD:** KIKSTART.EU/MAGIC-BLOCKS-264



» [C128] Pausing mid jump to grab a Magic Block out of the air.

Magic Blocks are amazing things, despite being taller than the average person they'll shrink down to tiny proportions for storage purposes. That's why Archimedes the sorcerer needs to learn how they work; he's only recently completed his training and needs to get some practical experience in before heading out into the world.

Which is why he finds himself in the first of a series of challenge rooms, surrounded by riches beyond his wildest dreams, platforms, spikes and blocks. His objective is to collect the key and head for the exit which subsequently materialises while using blocks to build stairways, but only the time limit prevents Archie from picking up some trinkets along the way.

The early levels are relatively easy so players can acclimatise to how the player's avatar moves and where the Magic Blocks can be used, but after that comes a series of interesting puzzles to solve.

» Score **86%**



» [Plus/4] A combination of problem solving and collecting bling along the way.

PRINCE OF PERSIA

» **PLATFORM:** ACORN BBC MASTER » **DOWNLOAD:** KIKSTART.EU/POP-BBC
» **DEVELOPER:** BITSHIFTERS COLLECTIVE » **PRICE:** FREE

The Sultan's daughter is the only thing standing between Grand Vizier Jaffar and his power hungry plans to rule, so the poor princess has been threatened with marriage or death and given an hour to decide. Her true love has been unceremoniously dumped into the palace dungeons, and he has a few things he would like to say to Jaffar about this plan, assuming he can get out in time – past all of the sword-wielding guards, spike-filled pits, metal chompers and other nasty hazards.

Jordan Mechner's classic has made its way to the BBC Master courtesy of Bitshifters Collective and it has done a sterling job of making it work, bringing all of the presentation and animation which made the original so popular over to Acorn's hardware. As with the original, this version is a challenging and sometimes frustrating game that will need some practising to master but is well worth the attention.

» Score **94%**



» [BBC Master] The dungeon guards won't be pleased about an escape attempt.

· ROUNDUP ·

***Pad* is a solid version of *Arkanoid* for the Atari 8-bit written in 1995 by NRV but recently given a serious visual overhaul and some music from the almost omnipresent Miker before being rereleased.** Kikstart.eu/pad-a8 goes to a recent build within the Atari Age thread.

Sticking with the Atari, the task in *UFO Hunt* is probably obvious; move a crosshair around to target bouncing UFOs and blast them while avoiding dumped radioactive waste and a moving force barrier. The hunt commences over at Kikstart.eu/ufo-hunt-a8.

Finally, it's more an upgrade than a from scratch homebrew but Atari Age forumite MrFish has been pulling apart *Super Cobra* – again for the 8-bit computer – and adding some improvements, including reducing the chopper's size and altering background colours. The thread can be found behind Kikstart.eu/cobra-update-a8.

GOLDEN WING

» **PLATFORM:** COMMODORE AMIGA » **DEVELOPER:** COPPERSKY » **DOWNLOAD:** KIKSTART.EU/GOLDEN-WING-AMIGA » **PRICE:** FREE

The space lanes are often littered with debris, usually just asteroids drifting into traffic but sometimes there are alien invaders who don't know their Spaceway Code as well. Enter the Golden Wing and its pilot on cleanup duty, travelling from sector to sector blasting anything getting in the way.

Although the craft is reasonably manoeuvrable to start with it can be powered up, adding shields, extra lives, a speed up which changes the control scheme to make it easier to deal with and handy smart bombs. All of these items need to be collected before the round finishes however because otherwise they'll just disappear.

The gameplay is reminiscent of *Asteroids* variants like *Blasteroids* or *Stardust*: blast rocks until they're small enough to destroy and deal with the enemies or bosses while avoiding their shots before moving on to the next, harder level.

» Score **80%**



» [Amiga] Taking a moment to blast one of the bullet-spewing rockets.

MAILBAG

HAVE YOUR SAY… SEND US A LETTER OR MAKE YOURSELF HEARD ON THE ONLINE FORUM – **WWW.RETROGAMER.NET**



STAR LETTER

GAMES YOU MISSED

Dear **Retro Gamer**,
What retro game did the staff members each not discover until adulthood that you wish you would have been aware of as a child?
@OnionBugXD via Twitter

What a fantastic question. Drew reckons Baby Drew would have been absolutely blown away by *Gunstar Heroes*. Sam wishes his first experience of *Yoshi's Island* had been on the SNES rather than the Game Boy Advance, while Nick would have loved to have played the *Bonk* games on their original release. Receiving an Amstrad CPC meant Darran never experienced many of Jeff Minter's games and he's gutted it took him so long to discover *Gridrunner*.

» [SNES] We suspect Sam loves Yoshi because he bares a passing resemblance to a Gobbo-rescuing PlayStation hero.

» Original Xbox games live on with the Xbox One's backward compatibility scheme, and they look better than ever.

» [Atari 8-bit] *Cytron Masters* is one of the earliest resource gathering games we can think of. If anyone knows otherwise then let us know.

MEMORY RESOURCE

Dear Sir,
I was recently discussing with an RTS gamer friend about one of the genre's staple (or annoying) ingredients, that of resource-gathering. While I think this helps add a strategic element to the games, she believes that often it is simply an unnecessary and time-consuming hindrance.

What we really disagreed on, though, was which was truly the first RTS game to feature resource collection! I thought perhaps *Powermonger* on the 16-bit machines, but Gemma thought some obscure 8-bit game (the name of which apparently she cannot remember) was the forerunner. Any ideas?
D O'Conner

That's a really good question and if we're honest we're not sure that we know the definitive answer. One of the earliest examples we can think of is *Cytron Masters* for the Apple II and Atari 8-bit systems, which came out in 1982. It features generators that produce energy, which can then be used to create Cytrons and power them. If anyone can think of anything earlier then let us know.

REVISITING THE XBOX

Dear **Retro Gamer**
Now that the Xbox One and Xbox One X allow for backwards compatibility, will you be running a feature about it in the magazine? I think it's fascinating that Microsoft is prepared to release these older games for a new generation of gamers and I would love to read more about it.
Dean Hartley

Funnily enough, Dean we have something in the works. Darran's been impressed with just how good *Panzer Dragoon Orta* looks, so expect a feature in a coming issue.

BIG FONT, LITTLE FONT

Dear **Retro Gamer**,
I don't know if you guys were doing this on purpose or not, but I've noticed the print is much more high contrast than in the past, lately. I'm 42 and consider myself a hardcore retro gamer… But some of your past articles are printed in low to medium contrast text-to-background, and are very challenging to read comfortably. Issue 180 was filled with lots of black-on-white and white-on-black.
Thanks guys!
Gavin Wigg



» [Xbox] It's great to see so many Xbox games available on Xbox One and they now look better than ever.

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Thanks for getting in touch Gavin. We're aware that some of our readers have been struggling to read text, so we'll be making slight changes to the font size, which should make the magazine easier to read. Look out for the revised text sizes in the near future.

DON'T STOP THE MUSIC

Dear Darran,

I enjoyed the recent C64-based music CD with issue 179 of **Retro Gamer** magazine and I hope that there are more planned for the future, as there are so many classic tunes out there just waiting to be remastered. Everybody has their favourites. I would like *Laser Squad*, *Zoids* and *Kentilla* included on a further volume.

Yours sincerely,

Stuart Hardy

Glad you enjoyed the music CD, Stuart. It's gone down really well and we are sure we'll do others. If we do put together another SID-themed CD we'll certainly consider your choices.



» [PS4] *Shenmue III* has been delayed until 2019. Expect a new *Shenmue*-related feature from us before then.

SHEN-MUSINGS

I would love a special issue on Yu Suzuki and *Shenmue* itself, covering the development of this incredible series. It would have to have a hefty contribution from Suzuki himself, naturally.

@LightningLariat via Twitter

Worry not, we've not forgotten about *Shenmue*. While we've covered the original in the past we've now got the opportunity to look at the series in general. Look out for it later in the year.

DISCUSSED THIS MONTH

Kickstarter projects

It was a bittersweet month for Nick, being a backer for both *Shenmue* and *Bloodstained: Ritual Of The Night*. On the one hand, the news that his beloved *Shenmue III* was not arriving this year made a single tear roll down the side of his cheek. However, he was treated to a retro-styled prologue to *Bloodstained*, called *Curse Of The Moon*, which, as it turns out, is actually quite a fun little distraction.





From the forum

Every month, Retro Gamer asks a question on the forum and prints the best replies. This month we wanted to know…

What is your favourite Mega Drive game?

kebabinho
Streets of Rage II - Perfect answer to *Final Fight*.

Robert Bussey
Sonic the Hedgehog 2. The only game I ever bought on launch day. Sonic Tuesday. Loved every minute of it and remember it well to this day

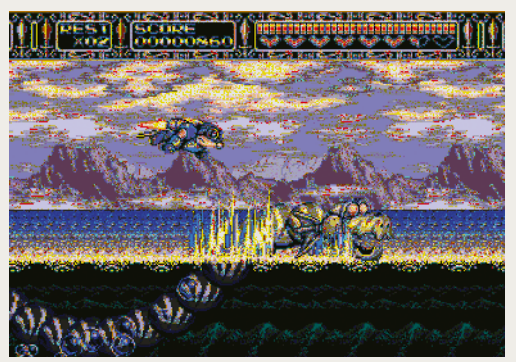
RetroBob
I have great memories of playing two player *Streets Of Rage* and it still stands up incredibly well to this day!

George Vasquez
Rocket Knight Adventures. It has good level design, challenging difficulty, and a memorable soundtrack to top it off.

Graham Plowman
Castlevania Bloodlines – not only because it was the only *Castlevania* entry on the system, but it was also a great game.

Stephen Marshall
ToeJam & Earl, with *Streets Of Rage II* a close second. I love rogue-likes, I love the soundtrack, and it's just so charming and replayable.

Antonio Granjo
Dynamite Headdy. Underrated game: great platforming, great graphics, great music, lots of funny details and secrets. Treasure is the best.



» [Mega Drive] Sparkster's outing on the Mega Drive was an excellent one.

Oliver Boulton-Lear
I really like *Quackshot*. I know it is kiddy and quite easy but it's charming and looks great and has a brilliant soundtrack.

Marasai
Sonic 2, it's just a gem of a game all the way to the last boss.

Whenever I see it on a portable screen like the PSP I get that "I'm in the future" feeling, it still impresses me to this day.

SpecChum81
How do you pick just one? Almost all of them hold a special place for me, but the first one I ever played was *Golden Axe* so I may pick that one if forced.

retro GAMER

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ENDGAME



PUNKY SKUNK

» According to the back of the box, "Punky ain't your typical mascot 'with an attitude'. He's a gen-X skunk who loves extreme sports – and he's on a mission!" Sorry Jaleco, but Punky Skunk sounds exactly like a typical mascot with attitude. What you've come up with is a less memorable version of Bubsy. Still, there might be some redeeming feature here, so let's skip to the end and find out...

01



» Final boss defeated! Success! Punky decides to inform his friends of this, telling them that he's finally got rid of Badler. Yes, the villain's name begins with "bad" because the concept of subtlety is completely alien to this genre.

02



» Does Kelly take a second to wonder if Badler could have been rehabilitated in some way? No, she just rejoices, even though Punky's statement could well imply actual murder. Sometimes, you can't take statements at face value.

03



» The evil BB Brigade is gone now, too. Kelly is thrilled, but doesn't say why. They were apparently massive polluters, but if you mention that then people get dangerous ideas like 'environmentalism is good' by reading between the lines.



04

» Nash offers not even the smallest shred of insight or reflection on the events of the game, instead sucking up to Punky like he was the world's smelliest, hairiest lollipop. Frankly, Nash, we're disgusted by your behaviour. This is why you didn't get to be a sidekick for a better character.



05

» What's so punk about Punky Skunk, anyway? We're not sure lapping up all of this sycophantic praise is what Johnny Rotten would have done. Then again, this is sanitised entertainment for kids and the Sex Pistols front man did those butter ads, so maybe the lesson is 'getting paid beats rebelliousness'.